

FIG. 1A

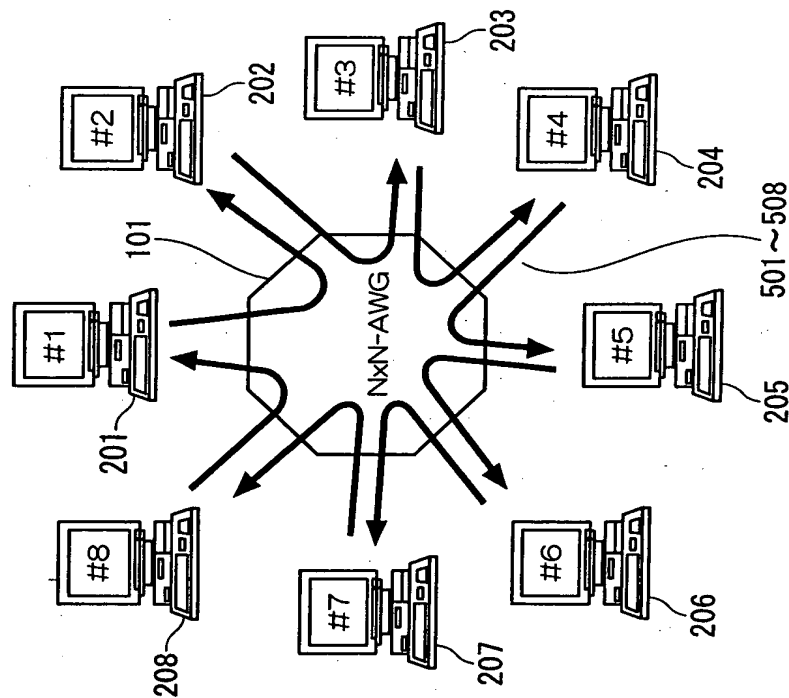


FIG. 1B

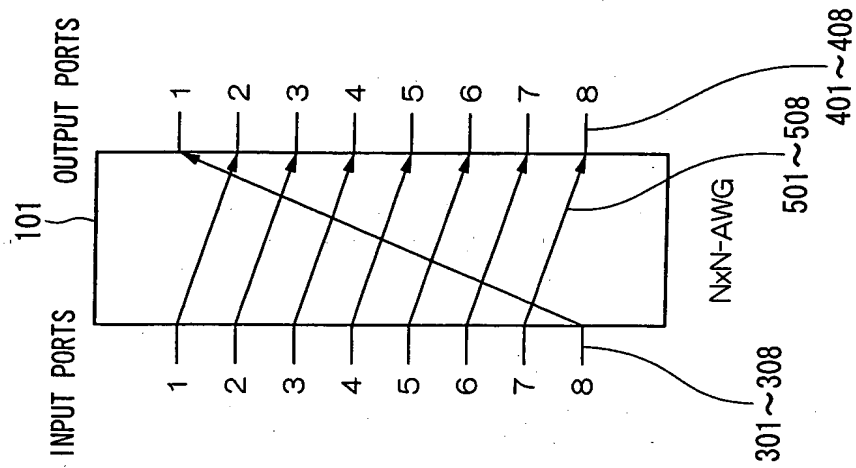


FIG.2A

FIG.2B

1301~1308

INPUT PORTS								OUTPUT PORTS							
1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
1	$\lambda 1$	$\lambda 2$	$\lambda 3$	$\lambda 4$	$\lambda 5$	$\lambda 6$	$\lambda 7$	1	$\lambda 1$	$\lambda 2$	$\lambda 3$	$\lambda 4$	$\lambda 5$	$\lambda 6$	$\lambda 7$
2	$\lambda 2$	$\lambda 3$	$\lambda 4$	$\lambda 5$	$\lambda 6$	$\lambda 7$	$\lambda 8$	2	$\lambda 2$	$\lambda 3$	$\lambda 4$	$\lambda 5$	$\lambda 6$	$\lambda 7$	$\lambda 8$
3	$\lambda 3$	$\lambda 4$	$\lambda 5$	$\lambda 6$	$\lambda 7$	$\lambda 8$	$\lambda 9$	3	$\lambda 3$	$\lambda 4$	$\lambda 5$	$\lambda 6$	$\lambda 7$	$\lambda 8$	$\lambda 9$
4	$\lambda 4$	$\lambda 5$	$\lambda 6$	$\lambda 7$	$\lambda 8$	$\lambda 9$	$\lambda 10$	4	$\lambda 4$	$\lambda 5$	$\lambda 6$	$\lambda 7$	$\lambda 8$	$\lambda 9$	$\lambda 10$
5	$\lambda 5$	$\lambda 6$	$\lambda 7$	$\lambda 8$	$\lambda 9$	$\lambda 10$	$\lambda 11$	5	$\lambda 5$	$\lambda 6$	$\lambda 7$	$\lambda 8$	$\lambda 9$	$\lambda 10$	$\lambda 11$
6	$\lambda 6$	$\lambda 7$	$\lambda 8$	$\lambda 9$	$\lambda 10$	$\lambda 11$	$\lambda 12$	6	$\lambda 6$	$\lambda 7$	$\lambda 8$	$\lambda 9$	$\lambda 10$	$\lambda 11$	$\lambda 12$
7	$\lambda 7$	$\lambda 8$	$\lambda 9$	$\lambda 10$	$\lambda 11$	$\lambda 12$	$\lambda 13$	7	$\lambda 7$	$\lambda 8$	$\lambda 9$	$\lambda 10$	$\lambda 11$	$\lambda 12$	$\lambda 13$
8	$\lambda 8$	$\lambda 9$	$\lambda 10$	$\lambda 11$	$\lambda 12$	$\lambda 13$	$\lambda 14$	8	$\lambda 8$	$\lambda 9$	$\lambda 10$	$\lambda 11$	$\lambda 12$	$\lambda 13$	$\lambda 14$

INPUT PORTS								OUTPUT PORTS							
1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
1	$\lambda 1$	$\lambda 2$	$\lambda 3$	$\lambda 4$	$\lambda 5$	$\lambda 6$	$\lambda 7$	1	$\lambda 1$	$\lambda 2$	$\lambda 3$	$\lambda 4$	$\lambda 5$	$\lambda 6$	$\lambda 7$
2	$\lambda 2$	$\lambda 3$	$\lambda 4$	$\lambda 5$	$\lambda 6$	$\lambda 7$	$\lambda 8$	2	$\lambda 2$	$\lambda 3$	$\lambda 4$	$\lambda 5$	$\lambda 6$	$\lambda 7$	$\lambda 8$
3	$\lambda 3$	$\lambda 4$	$\lambda 5$	$\lambda 6$	$\lambda 7$	$\lambda 8$	$\lambda 9$	3	$\lambda 3$	$\lambda 4$	$\lambda 5$	$\lambda 6$	$\lambda 7$	$\lambda 8$	$\lambda 9$
4	$\lambda 4$	$\lambda 5$	$\lambda 6$	$\lambda 7$	$\lambda 8$	$\lambda 9$	$\lambda 10$	4	$\lambda 4$	$\lambda 5$	$\lambda 6$	$\lambda 7$	$\lambda 8$	$\lambda 9$	$\lambda 10$
5	$\lambda 5$	$\lambda 6$	$\lambda 7$	$\lambda 8$	$\lambda 9$	$\lambda 10$	$\lambda 11$	5	$\lambda 5$	$\lambda 6$	$\lambda 7$	$\lambda 8$	$\lambda 9$	$\lambda 10$	$\lambda 11$
6	$\lambda 6$	$\lambda 7$	$\lambda 8$	$\lambda 9$	$\lambda 10$	$\lambda 11$	$\lambda 12$	6	$\lambda 6$	$\lambda 7$	$\lambda 8$	$\lambda 9$	$\lambda 10$	$\lambda 11$	$\lambda 12$
7	$\lambda 7$	$\lambda 8$	$\lambda 9$	$\lambda 10$	$\lambda 11$	$\lambda 12$	$\lambda 13$	7	$\lambda 7$	$\lambda 8$	$\lambda 9$	$\lambda 10$	$\lambda 11$	$\lambda 12$	$\lambda 13$
8	$\lambda 8$	$\lambda 9$	$\lambda 10$	$\lambda 11$	$\lambda 12$	$\lambda 13$	$\lambda 14$	8	$\lambda 8$	$\lambda 9$	$\lambda 10$	$\lambda 11$	$\lambda 12$	$\lambda 13$	$\lambda 14$

FIG.3A

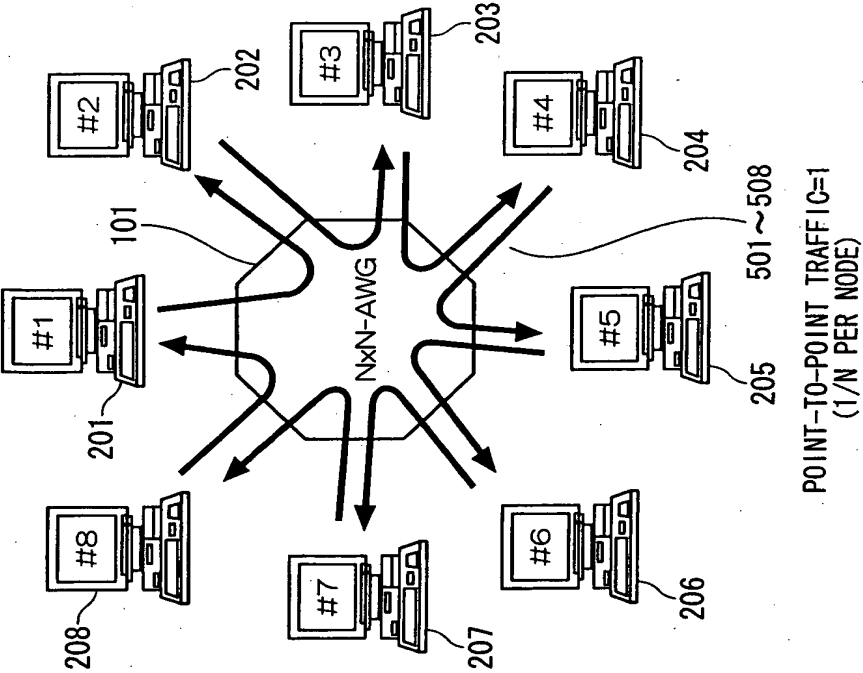


FIG.3B

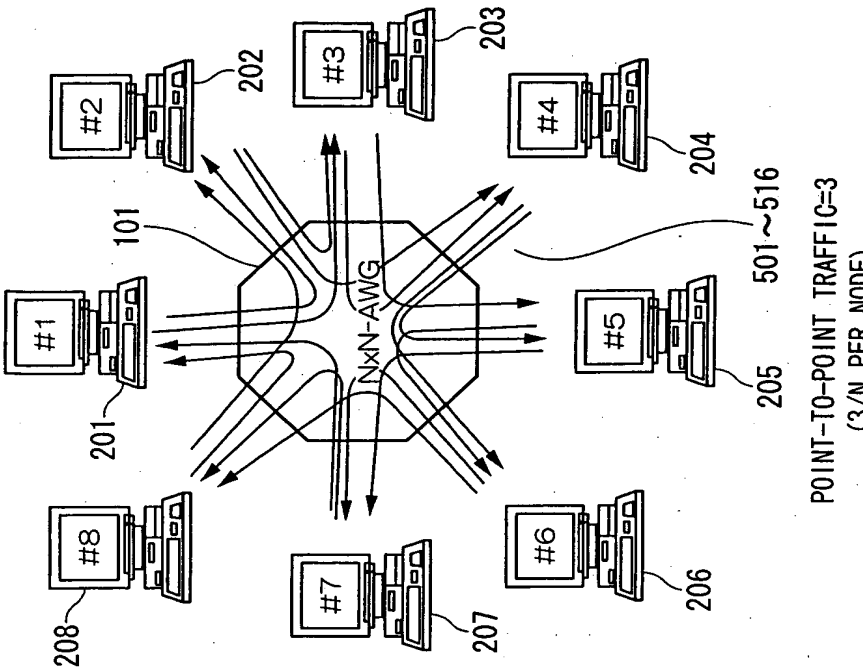


FIG.4A

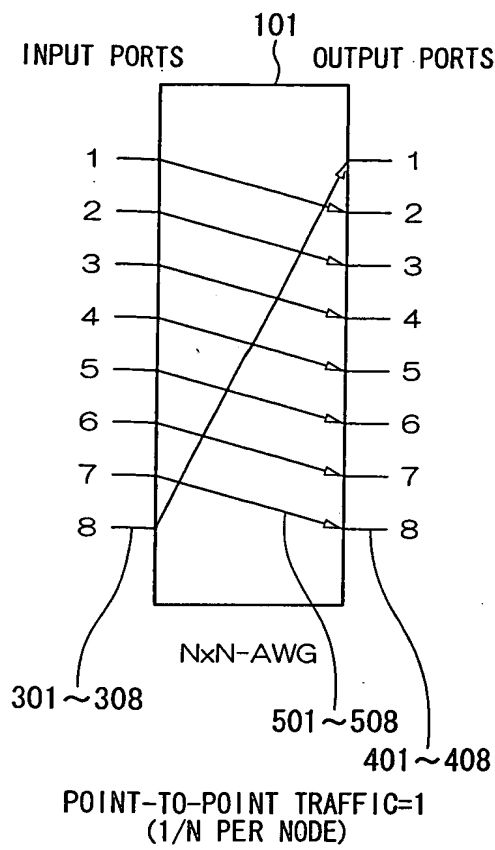


FIG.4B

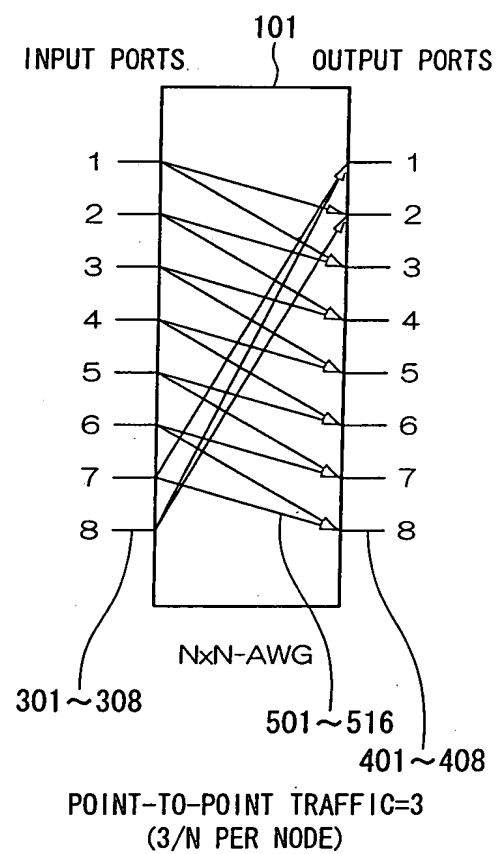


FIG.5A

FIG.5B

1301~1316

OUTPUT PORTS

	1	2	3	4	5	6	7	8
1	$\lambda 1$	$\lambda 2$	$\lambda 3$	$\lambda 4$	$\lambda 5$	$\lambda 6$	$\lambda 7$	$\lambda 8$
2	$\lambda 2$	$\lambda 3$	$\lambda 4$	$\lambda 5$	$\lambda 6$	$\lambda 7$	$\lambda 8$	$\lambda 9$
3	$\lambda 3$	$\lambda 4$	$\lambda 5$	$\lambda 6$	$\lambda 7$	$\lambda 8$	$\lambda 9$	$\lambda 10$
4	$\lambda 4$	$\lambda 5$	$\lambda 6$	$\lambda 7$	$\lambda 8$	$\lambda 9$	$\lambda 10$	$\lambda 11$
5	$\lambda 5$	$\lambda 6$	$\lambda 7$	$\lambda 8$	$\lambda 9$	$\lambda 10$	$\lambda 11$	$\lambda 12$
6	$\lambda 6$	$\lambda 7$	$\lambda 8$	$\lambda 9$	$\lambda 10$	$\lambda 11$	$\lambda 12$	$\lambda 13$
7	$\lambda 7$	$\lambda 8$	$\lambda 9$	$\lambda 10$	$\lambda 11$	$\lambda 12$	$\lambda 13$	$\lambda 14$
8	$\lambda 8$	$\lambda 9$	$\lambda 10$	$\lambda 11$	$\lambda 12$	$\lambda 13$	$\lambda 14$	$\lambda 15$

INPUT PORTS

OUTPUT PORTS

	1	2	3	4	5	6	7	8
1	$\lambda 1$	$\lambda 2$	$\lambda 3$	$\lambda 4$	$\lambda 5$	$\lambda 6$	$\lambda 7$	$\lambda 8$
2	$\lambda 2$	$\lambda 3$	$\lambda 4$	$\lambda 5$	$\lambda 6$	$\lambda 7$	$\lambda 8$	$\lambda 11$
3	$\lambda 3$	$\lambda 4$	$\lambda 5$	$\lambda 6$	$\lambda 7$	$\lambda 8$	$\lambda 11$	$\lambda 12$
4	$\lambda 4$	$\lambda 5$	$\lambda 6$	$\lambda 7$	$\lambda 8$	$\lambda 11$	$\lambda 12$	$\lambda 13$
5	$\lambda 5$	$\lambda 6$	$\lambda 7$	$\lambda 8$	$\lambda 11$	$\lambda 12$	$\lambda 13$	$\lambda 14$
6	$\lambda 6$	$\lambda 7$	$\lambda 8$	$\lambda 11$	$\lambda 12$	$\lambda 13$	$\lambda 14$	$\lambda 15$
7	$\lambda 7$	$\lambda 8$	$\lambda 11$	$\lambda 12$	$\lambda 13$	$\lambda 14$	$\lambda 15$	$\lambda 16$
8	$\lambda 8$	$\lambda 11$	$\lambda 12$	$\lambda 13$	$\lambda 14$	$\lambda 15$	$\lambda 16$	$\lambda 17$

INPUT PORTS

FIG.6A

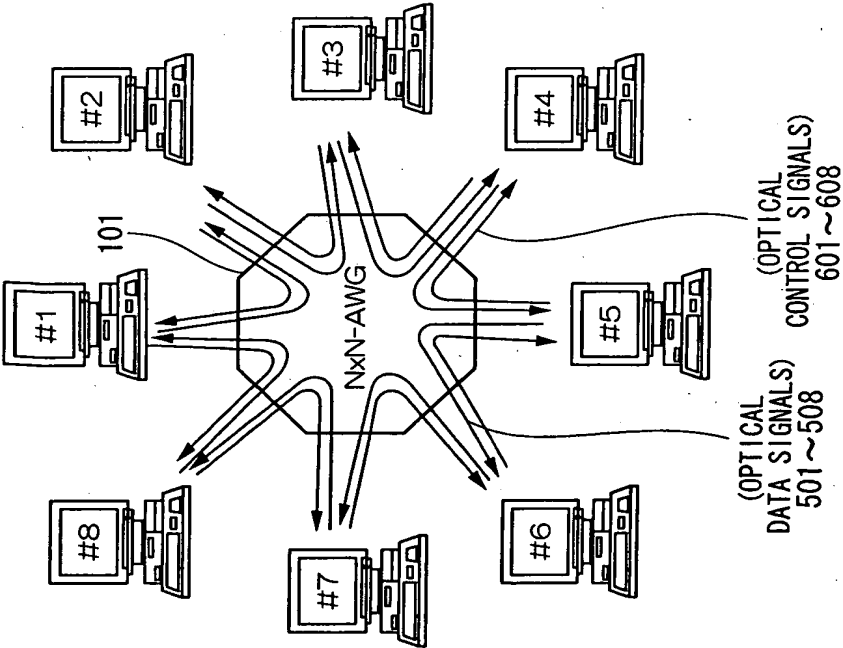


FIG.6B

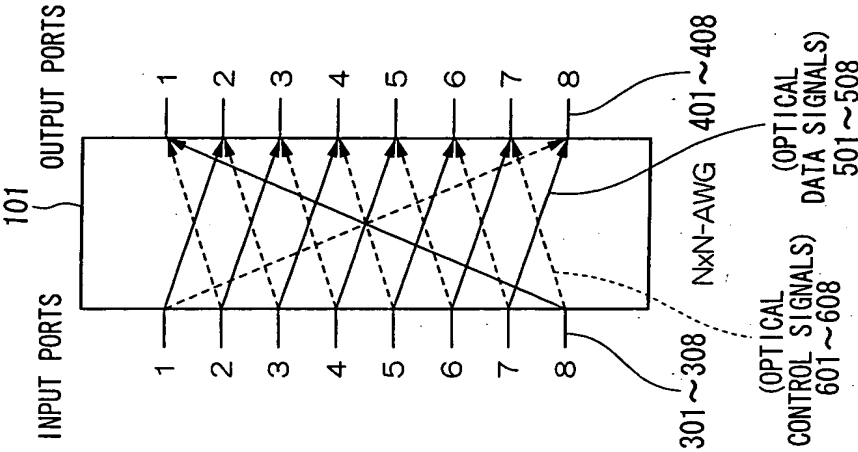


FIG.7B

1401~1408								1301~1308							
INPUT PORTS								OUTPUT PORTS							
1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
1	$\lambda 1$	$\lambda 2$	$\lambda 3$	$\lambda 4$	$\lambda 5$	$\lambda 6$	$\lambda 7$	1	$\lambda 1$	$\lambda 2$	$\lambda 3$	$\lambda 4$	$\lambda 5$	$\lambda 6$	$\lambda 7$
2	$\lambda 2$	$\lambda 3$	$\lambda 4$	$\lambda 5$	$\lambda 6$	$\lambda 7$	$\lambda 8$	2	$\lambda 2$	$\lambda 3$	$\lambda 4$	$\lambda 5$	$\lambda 6$	$\lambda 7$	$\lambda 8$
3	$\lambda 3$	$\lambda 4$	$\lambda 5$	$\lambda 6$	$\lambda 7$	$\lambda 8$	$\lambda 9$	3	$\lambda 3$	$\lambda 4$	$\lambda 5$	$\lambda 6$	$\lambda 7$	$\lambda 8$	$\lambda 9$
4	$\lambda 4$	$\lambda 5$	$\lambda 6$	$\lambda 7$	$\lambda 8$	$\lambda 9$	$\lambda 10$	4	$\lambda 4$	$\lambda 5$	$\lambda 6$	$\lambda 7$	$\lambda 8$	$\lambda 9$	$\lambda 10$
5	$\lambda 5$	$\lambda 6$	$\lambda 7$	$\lambda 8$	$\lambda 9$	$\lambda 10$	$\lambda 11$	5	$\lambda 5$	$\lambda 6$	$\lambda 7$	$\lambda 8$	$\lambda 9$	$\lambda 10$	$\lambda 11$
6	$\lambda 6$	$\lambda 7$	$\lambda 8$	$\lambda 9$	$\lambda 10$	$\lambda 11$	$\lambda 12$	6	$\lambda 6$	$\lambda 7$	$\lambda 8$	$\lambda 9$	$\lambda 10$	$\lambda 11$	$\lambda 12$
7	$\lambda 7$	$\lambda 8$	$\lambda 9$	$\lambda 10$	$\lambda 11$	$\lambda 12$	$\lambda 13$	7	$\lambda 7$	$\lambda 8$	$\lambda 9$	$\lambda 10$	$\lambda 11$	$\lambda 12$	$\lambda 13$
8	$\lambda 8$	$\lambda 9$	$\lambda 10$	$\lambda 11$	$\lambda 12$	$\lambda 13$	$\lambda 14$	8	$\lambda 8$	$\lambda 9$	$\lambda 10$	$\lambda 11$	$\lambda 12$	$\lambda 13$	$\lambda 14$

FIG.7A

1301~1308								1401~1408							
INPUT PORTS								OUTPUT PORTS							
1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
1	$\lambda 1$	$\lambda 2$	$\lambda 3$	$\lambda 4$	$\lambda 5$	$\lambda 6$	$\lambda 7$	1	$\lambda 1$	$\lambda 2$	$\lambda 3$	$\lambda 4$	$\lambda 5$	$\lambda 6$	$\lambda 7$
2	$\lambda 2$	$\lambda 3$	$\lambda 4$	$\lambda 5$	$\lambda 6$	$\lambda 7$	$\lambda 8$	2	$\lambda 2$	$\lambda 3$	$\lambda 4$	$\lambda 5$	$\lambda 6$	$\lambda 7$	$\lambda 8$
3	$\lambda 3$	$\lambda 4$	$\lambda 5$	$\lambda 6$	$\lambda 7$	$\lambda 8$	$\lambda 9$	3	$\lambda 3$	$\lambda 4$	$\lambda 5$	$\lambda 6$	$\lambda 7$	$\lambda 8$	$\lambda 9$
4	$\lambda 4$	$\lambda 5$	$\lambda 6$	$\lambda 7$	$\lambda 8$	$\lambda 9$	$\lambda 10$	4	$\lambda 4$	$\lambda 5$	$\lambda 6$	$\lambda 7$	$\lambda 8$	$\lambda 9$	$\lambda 10$
5	$\lambda 5$	$\lambda 6$	$\lambda 7$	$\lambda 8$	$\lambda 9$	$\lambda 10$	$\lambda 11$	5	$\lambda 5$	$\lambda 6$	$\lambda 7$	$\lambda 8$	$\lambda 9$	$\lambda 10$	$\lambda 11$
6	$\lambda 6$	$\lambda 7$	$\lambda 8$	$\lambda 9$	$\lambda 10$	$\lambda 11$	$\lambda 12$	6	$\lambda 6$	$\lambda 7$	$\lambda 8$	$\lambda 9$	$\lambda 10$	$\lambda 11$	$\lambda 12$
7	$\lambda 7$	$\lambda 8$	$\lambda 9$	$\lambda 10$	$\lambda 11$	$\lambda 12$	$\lambda 13$	7	$\lambda 7$	$\lambda 8$	$\lambda 9$	$\lambda 10$	$\lambda 11$	$\lambda 12$	$\lambda 13$
8	$\lambda 8$	$\lambda 9$	$\lambda 10$	$\lambda 11$	$\lambda 12$	$\lambda 13$	$\lambda 14$	8	$\lambda 8$	$\lambda 9$	$\lambda 10$	$\lambda 11$	$\lambda 12$	$\lambda 13$	$\lambda 14$

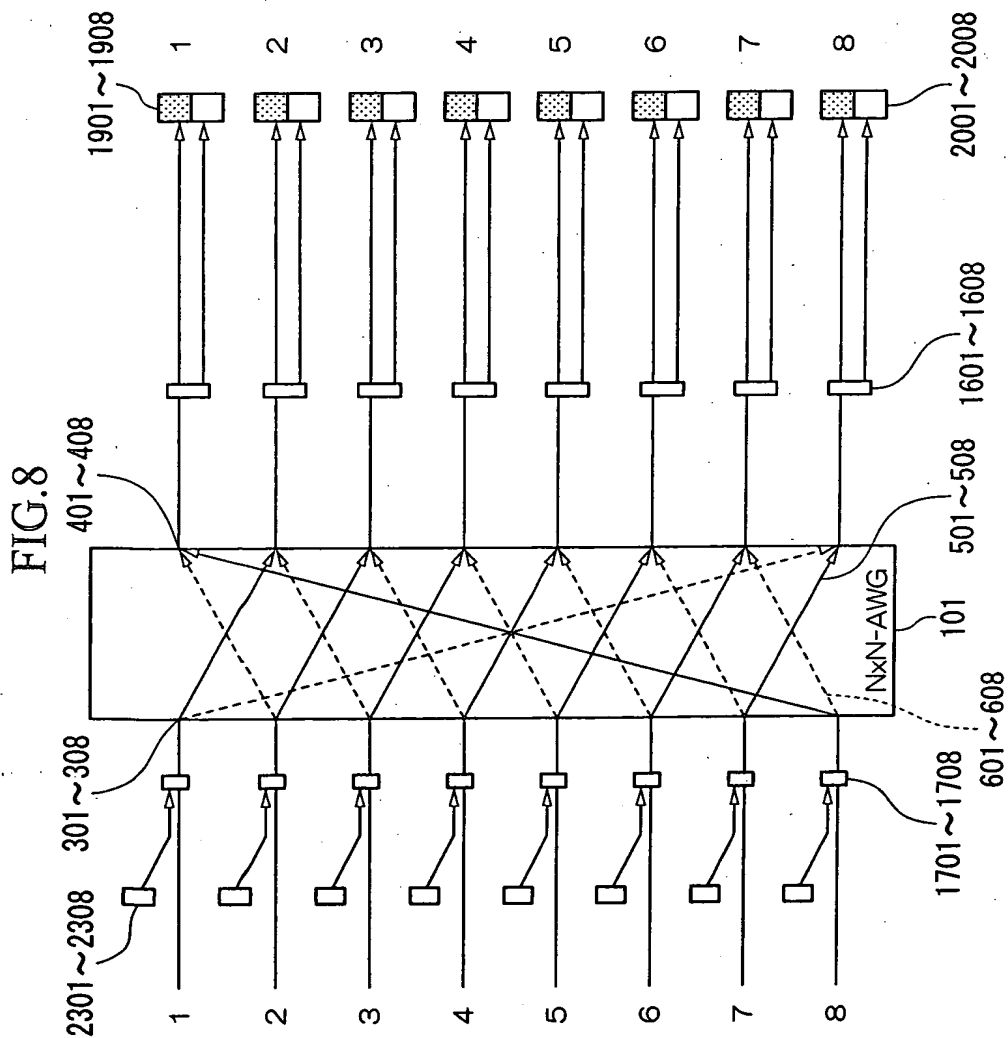
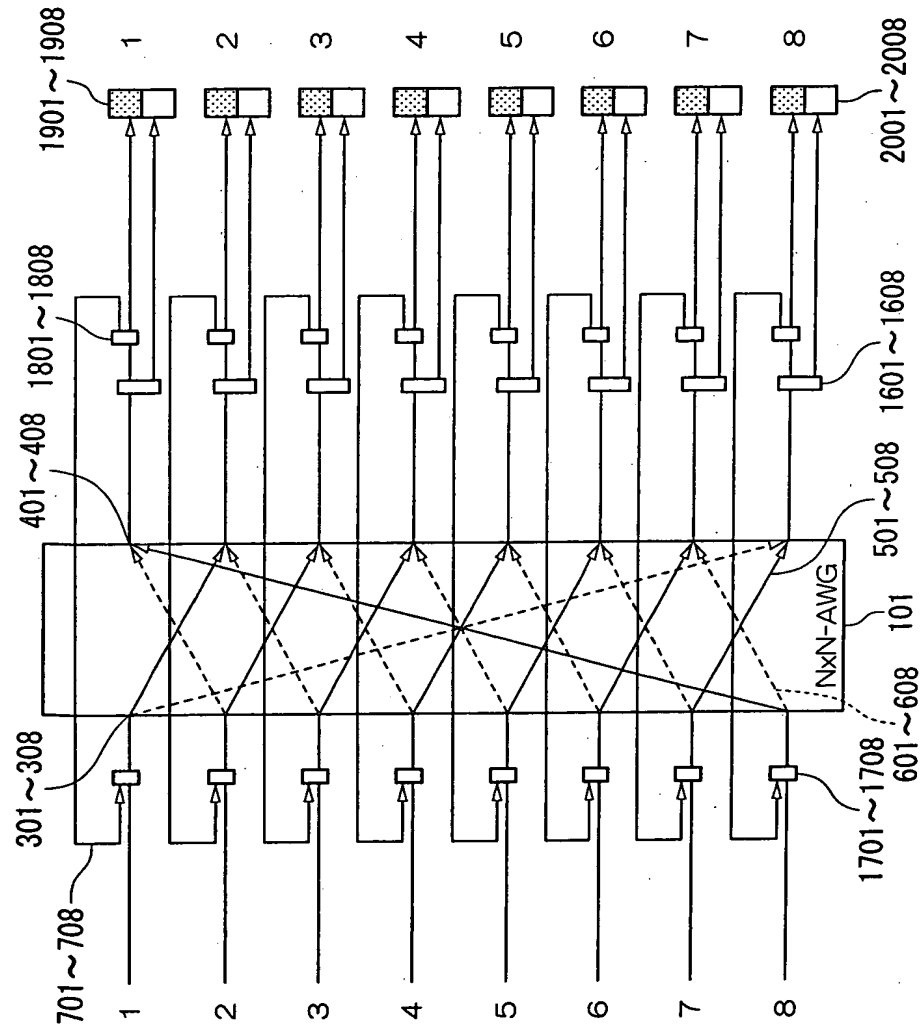
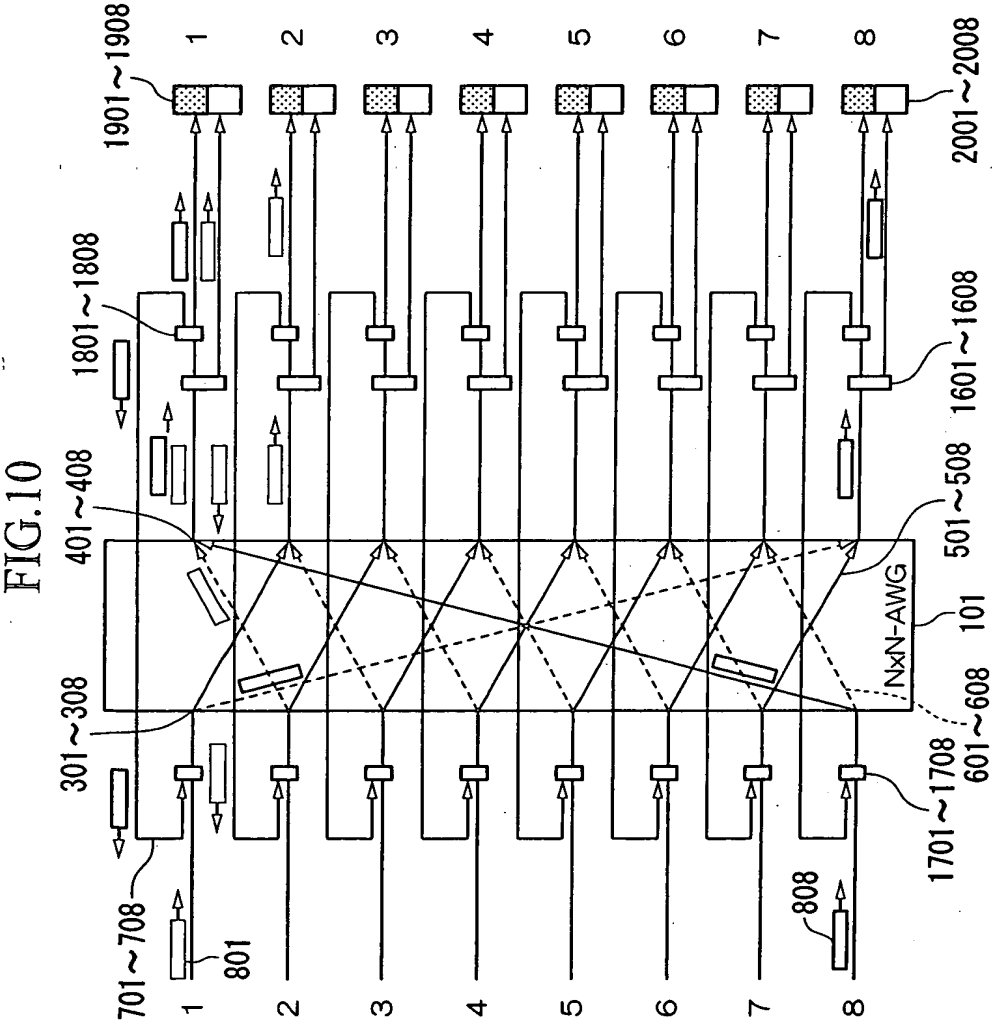


FIG. 9





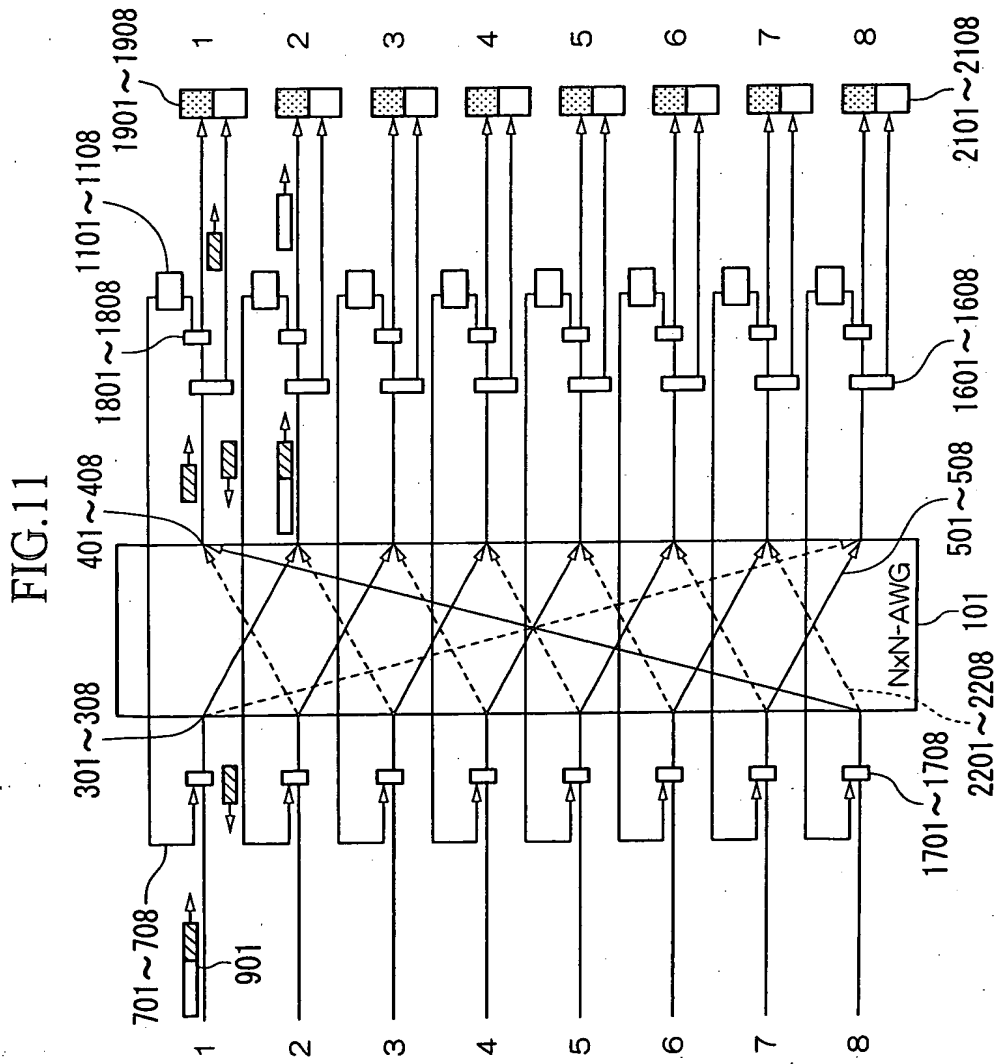


FIG.12A

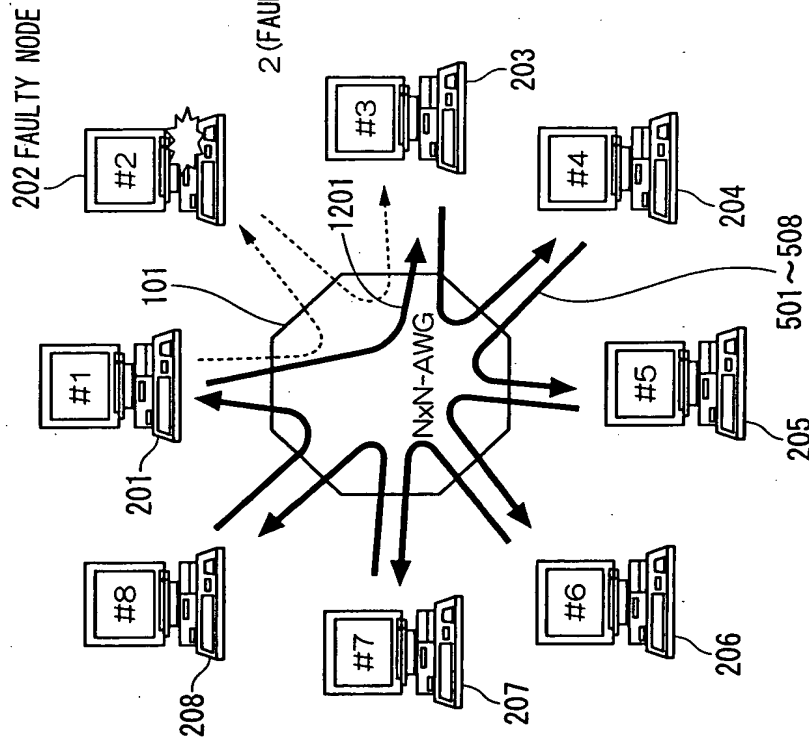


FIG.12B

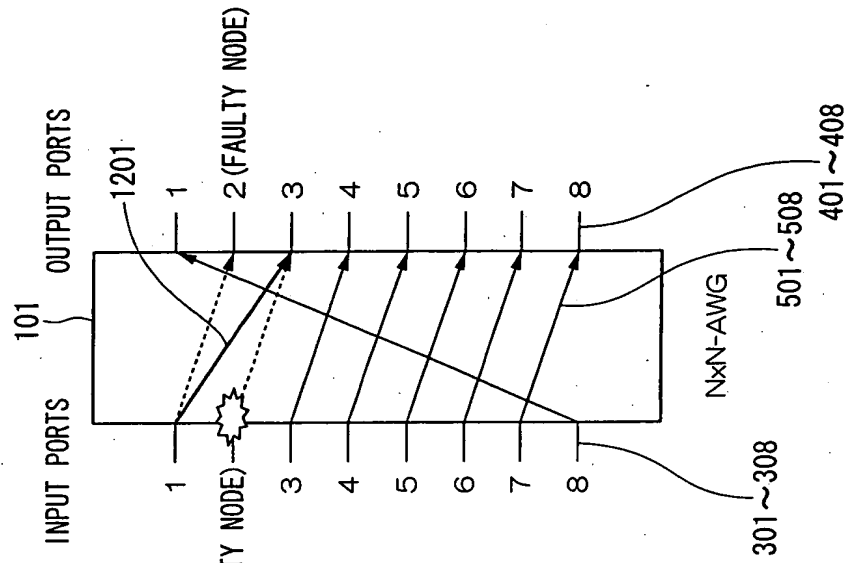


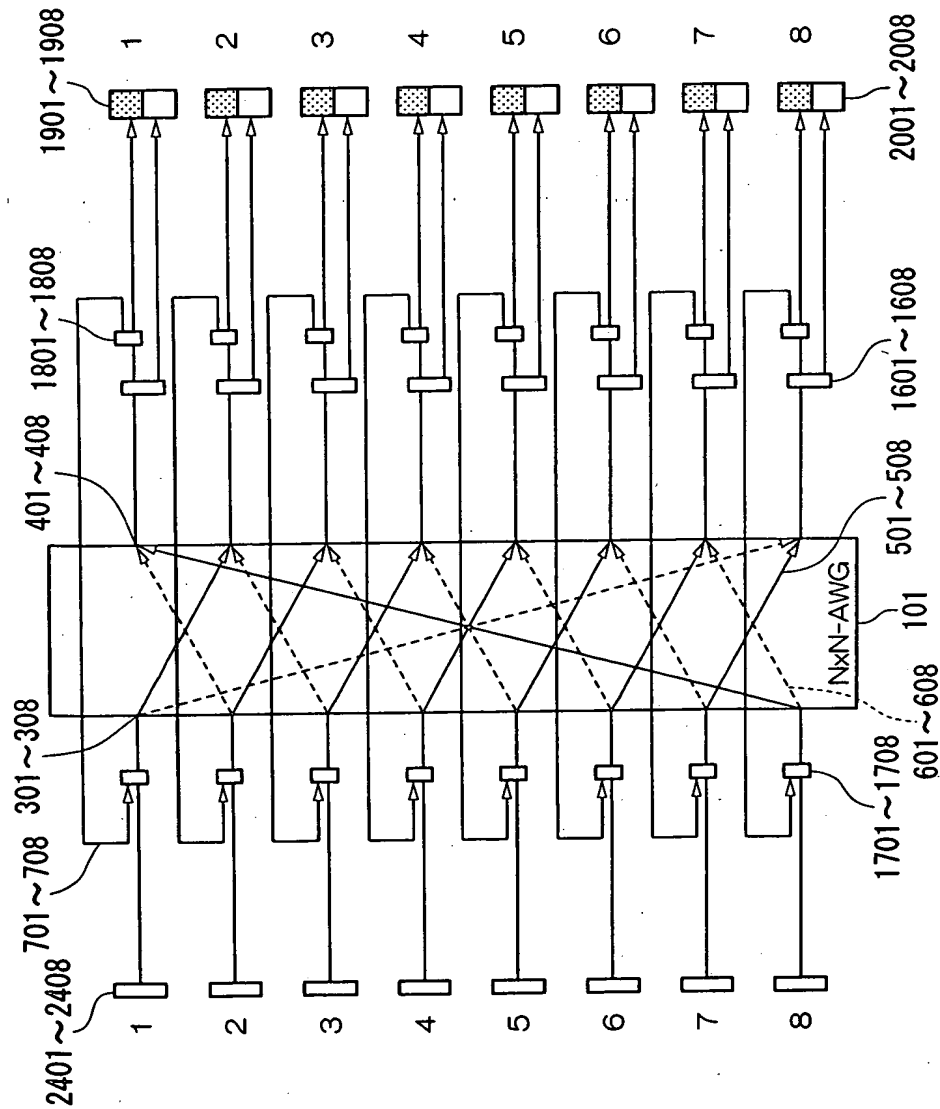
FIG.13B

		1301~1308				1501~1508			
		OUTPUT PORTS							
INPUT PORTS		1	2	3	4	5	6	7	8
	1	$\lambda 1$	$\lambda 12$	$\lambda 13$	$\lambda 14$	$\lambda 15$	$\lambda 16$	$\lambda 17$	$\lambda 18$
	2	$\lambda 12$	$\lambda 13$	$\lambda 14$	$\lambda 15$	$\lambda 16$	$\lambda 17$	$\lambda 18$	$\lambda 11$
	3	$\lambda 13$	$\lambda 14$	$\lambda 15$	$\lambda 16$	$\lambda 17$	$\lambda 18$	$\lambda 11$	$\lambda 12$
	4	$\lambda 14$	$\lambda 15$	$\lambda 16$	$\lambda 17$	$\lambda 18$	$\lambda 11$	$\lambda 12$	$\lambda 13$
	5	$\lambda 15$	$\lambda 16$	$\lambda 17$	$\lambda 18$	$\lambda 11$	$\lambda 12$	$\lambda 13$	$\lambda 14$
	6	$\lambda 16$	$\lambda 17$	$\lambda 18$	$\lambda 11$	$\lambda 12$	$\lambda 13$	$\lambda 14$	$\lambda 15$
	7	$\lambda 17$	$\lambda 18$	$\lambda 11$	$\lambda 12$	$\lambda 13$	$\lambda 14$	$\lambda 15$	$\lambda 16$
	8	$\lambda 18$	$\lambda 11$	$\lambda 12$	$\lambda 13$	$\lambda 14$	$\lambda 15$	$\lambda 16$	$\lambda 17$

FIG.13A

		1301~1308				1501~1508			
		OUTPUT PORTS							
INPUT PORTS		1	2	3	4	5	6	7	8
	1	$\lambda 1$	$\lambda 12$	$\lambda 13$	$\lambda 14$	$\lambda 15$	$\lambda 16$	$\lambda 17$	$\lambda 18$
	2	$\lambda 12$	$\lambda 13$	$\lambda 14$	$\lambda 15$	$\lambda 16$	$\lambda 17$	$\lambda 18$	$\lambda 19$
	3	$\lambda 13$	$\lambda 14$	$\lambda 15$	$\lambda 16$	$\lambda 17$	$\lambda 18$	$\lambda 19$	$\lambda 110$
	4	$\lambda 14$	$\lambda 15$	$\lambda 16$	$\lambda 17$	$\lambda 18$	$\lambda 19$	$\lambda 110$	$\lambda 111$
	5	$\lambda 15$	$\lambda 16$	$\lambda 17$	$\lambda 18$	$\lambda 19$	$\lambda 110$	$\lambda 111$	$\lambda 112$
	6	$\lambda 16$	$\lambda 17$	$\lambda 18$	$\lambda 19$	$\lambda 110$	$\lambda 111$	$\lambda 112$	$\lambda 113$
	7	$\lambda 17$	$\lambda 18$	$\lambda 19$	$\lambda 110$	$\lambda 111$	$\lambda 112$	$\lambda 113$	$\lambda 114$
	8	$\lambda 18$	$\lambda 19$	$\lambda 110$	$\lambda 111$	$\lambda 112$	$\lambda 113$	$\lambda 114$	$\lambda 115$

FIG.14



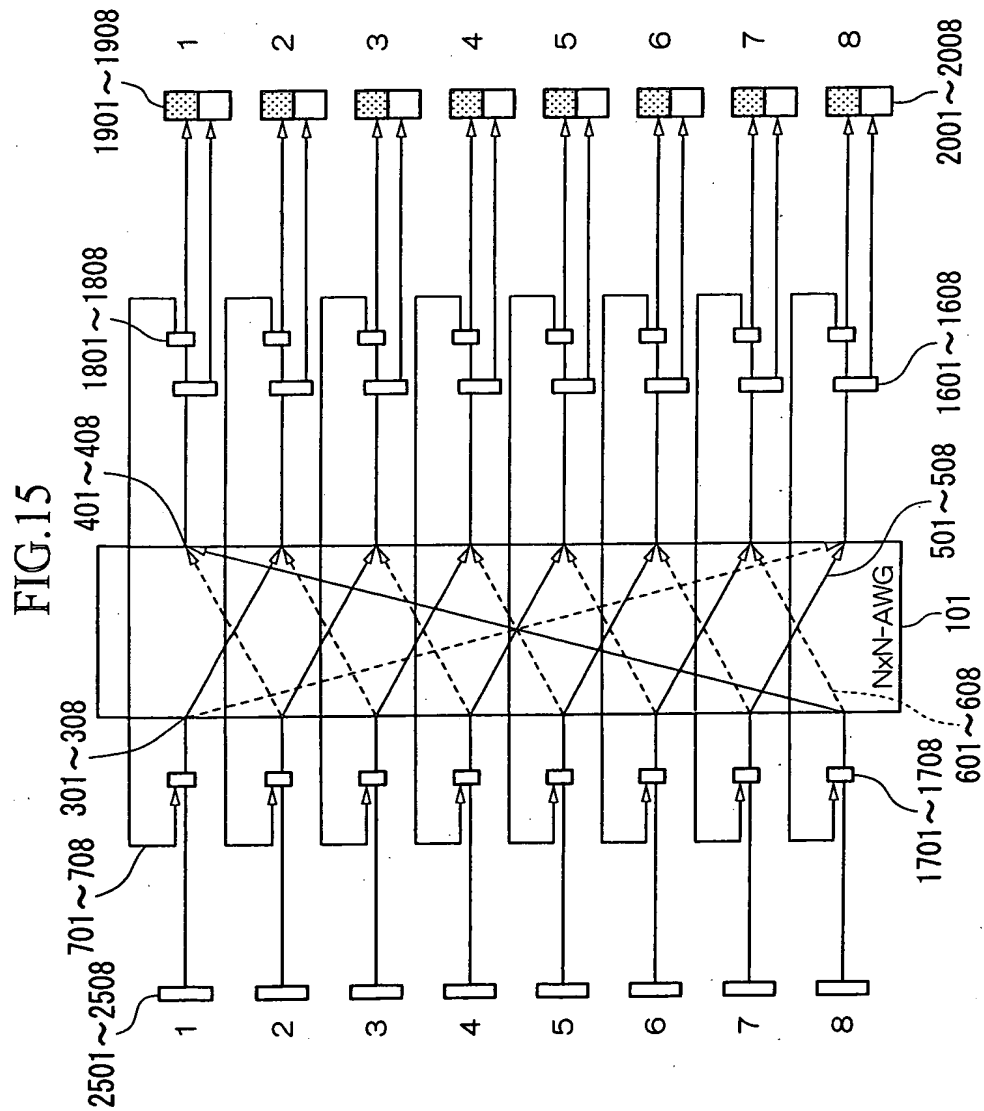


FIG.16

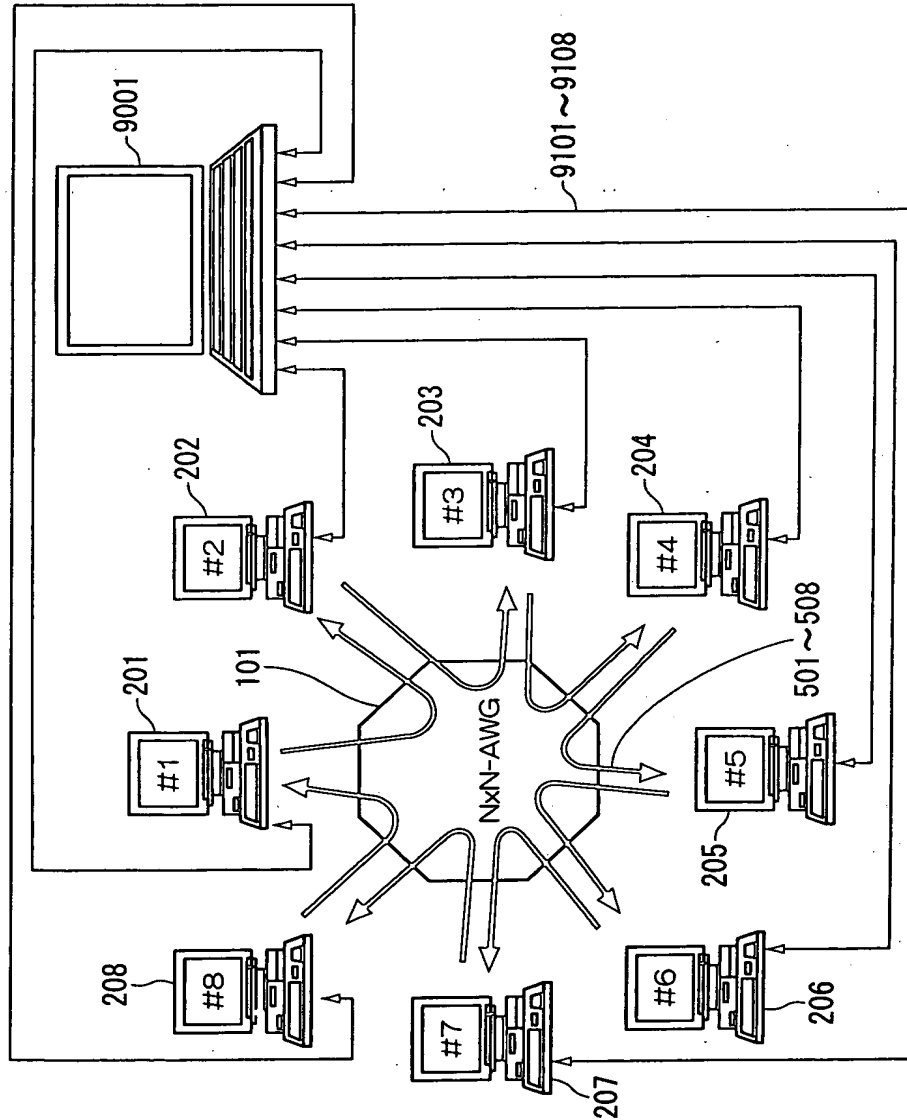
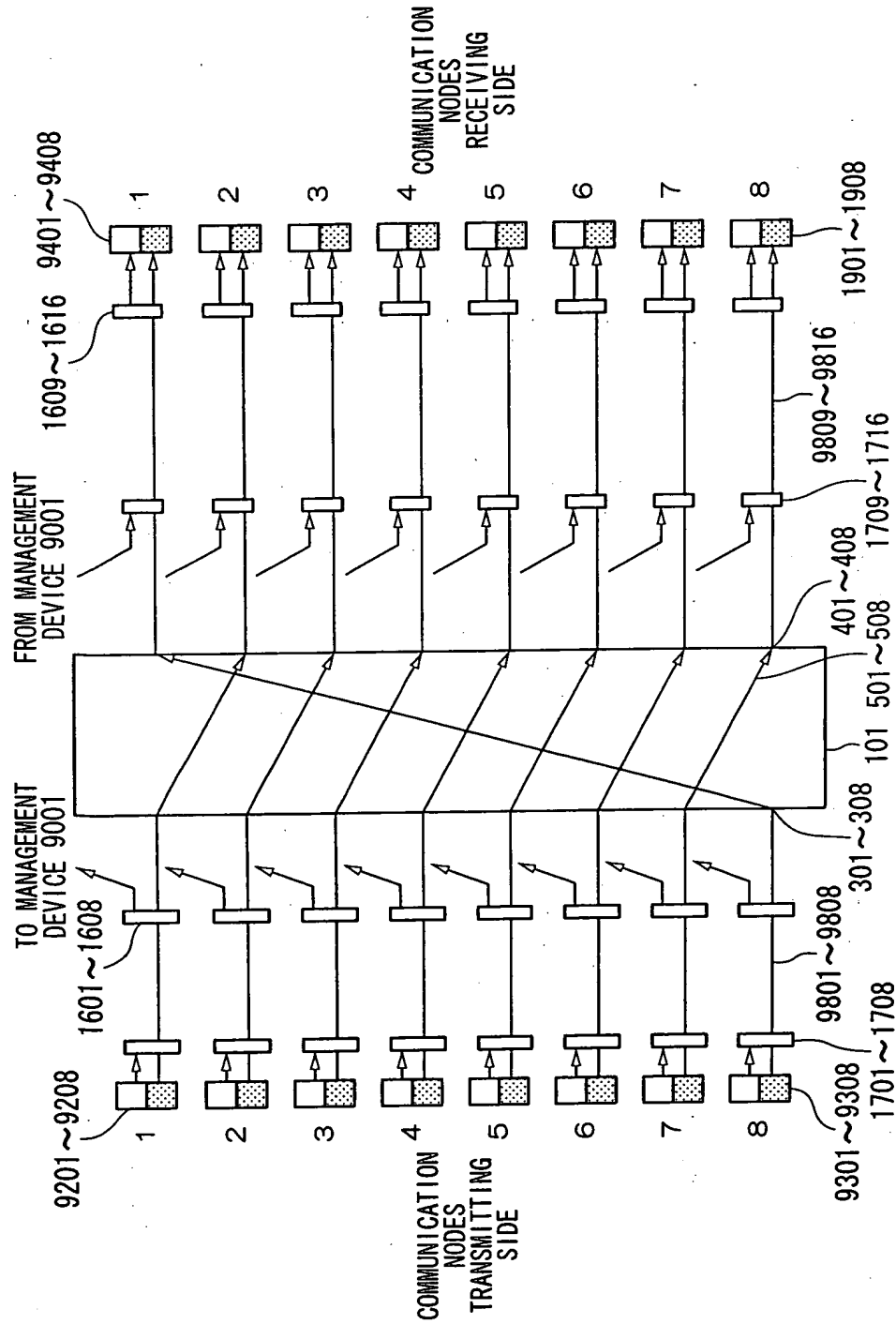
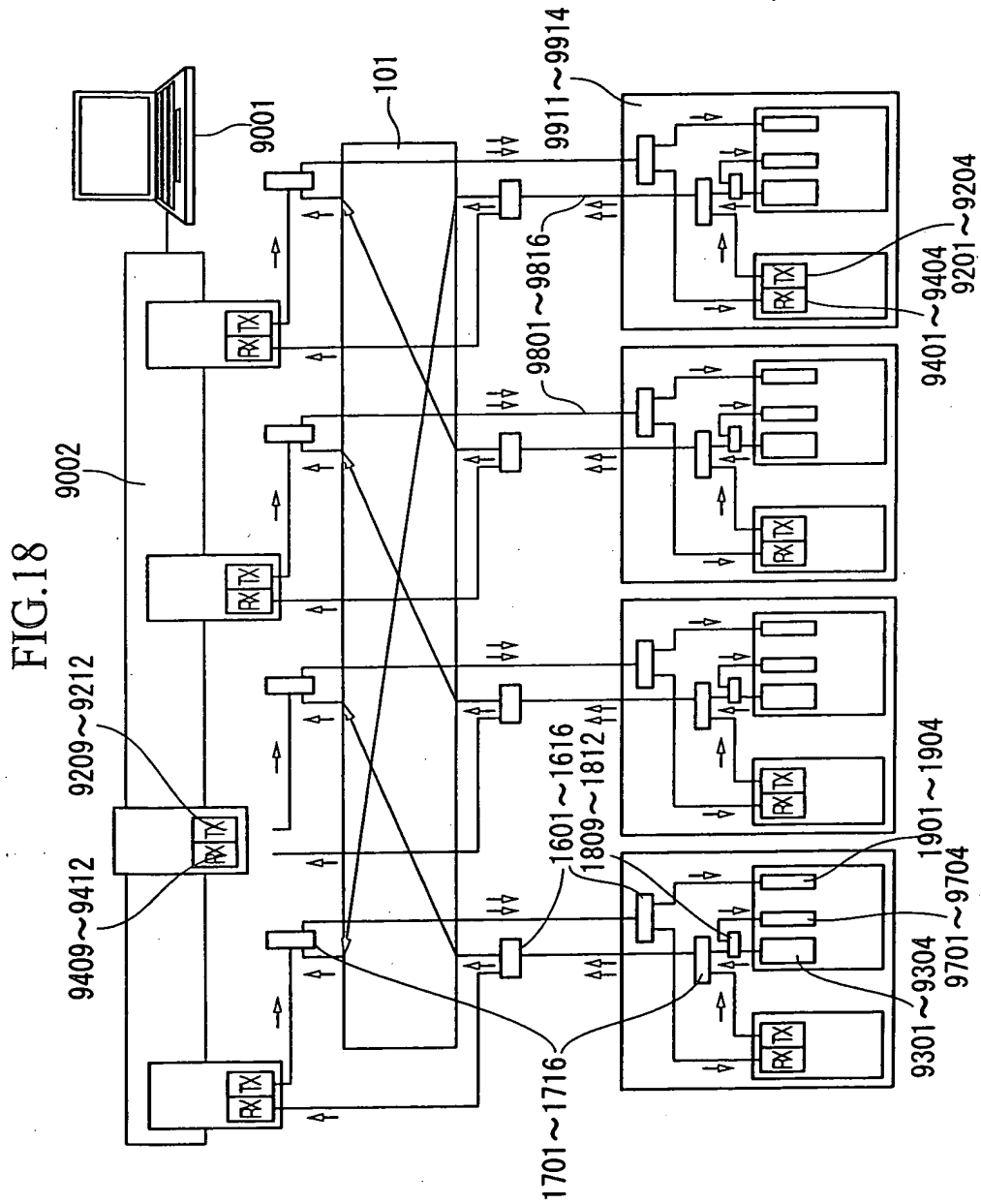


FIG.17





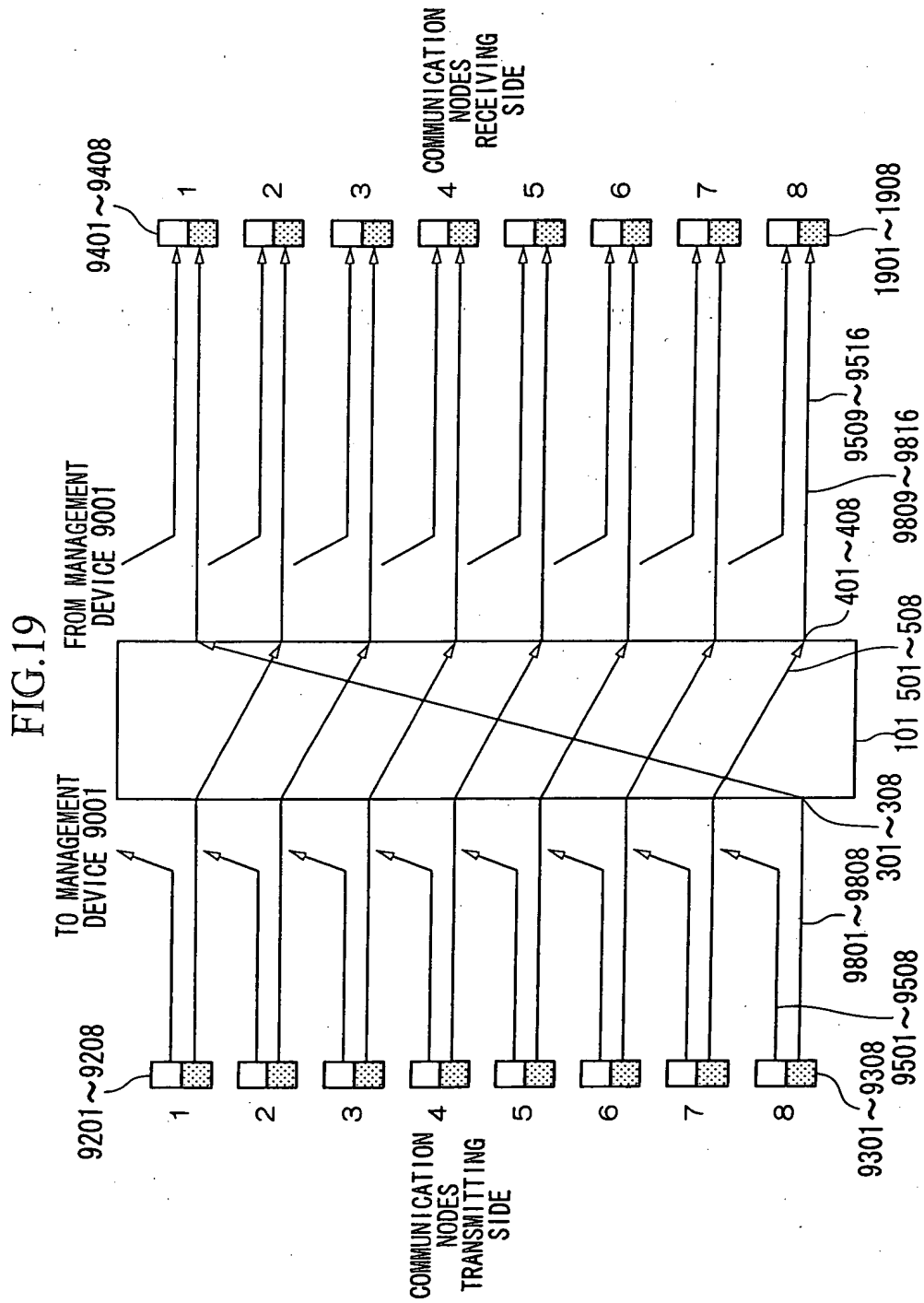
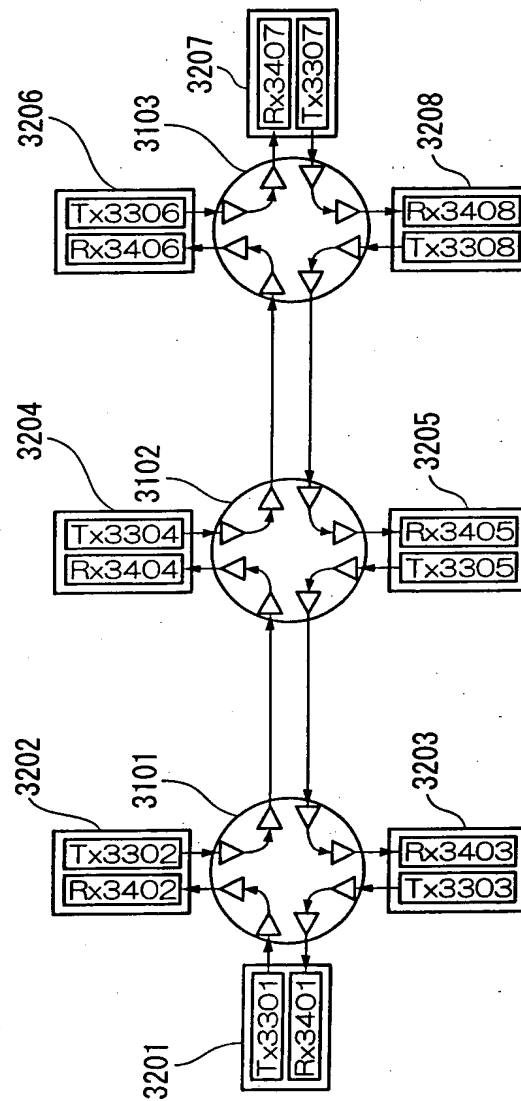


FIG.20



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FIG.21

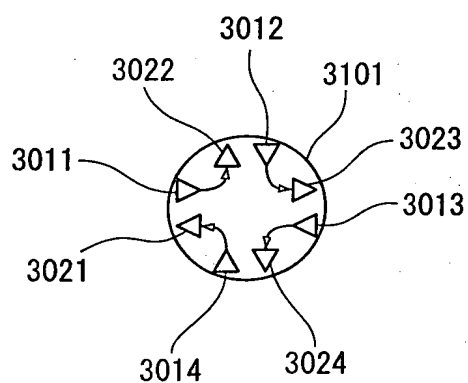


FIG.22

OPTICAL OUTPUT PORTS

OPTICAL INPUT PORTS		3021	3022	3023	3024
	3011	λ_1	λ_2	λ_3	λ_4
	3012	λ_2	λ_3	λ_4	λ_5
	3013	λ_3	λ_4	λ_5	λ_6
	3014	λ_4	λ_5	λ_6	λ_7

FIG.23






OPTICAL OUTPUT PORTS					
OPTICAL INPUT PORTS		3021	3022	3023	3024
	3011	λ_1	 λ_2	λ_3	λ_4
	3012	λ_2	λ_3	 λ_4	λ_1
	3013	λ_3	λ_4	λ_1	 λ_2
	3014	 λ_4	λ_1	λ_2	λ_3

FIG.24

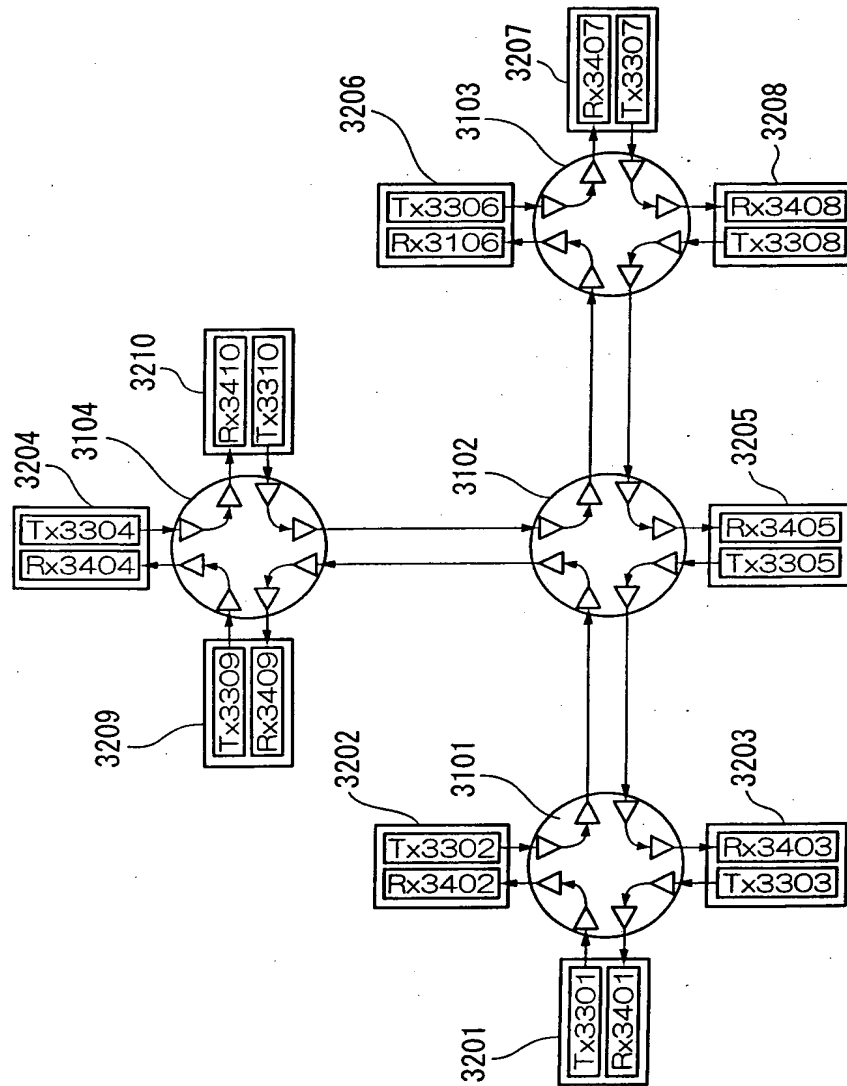
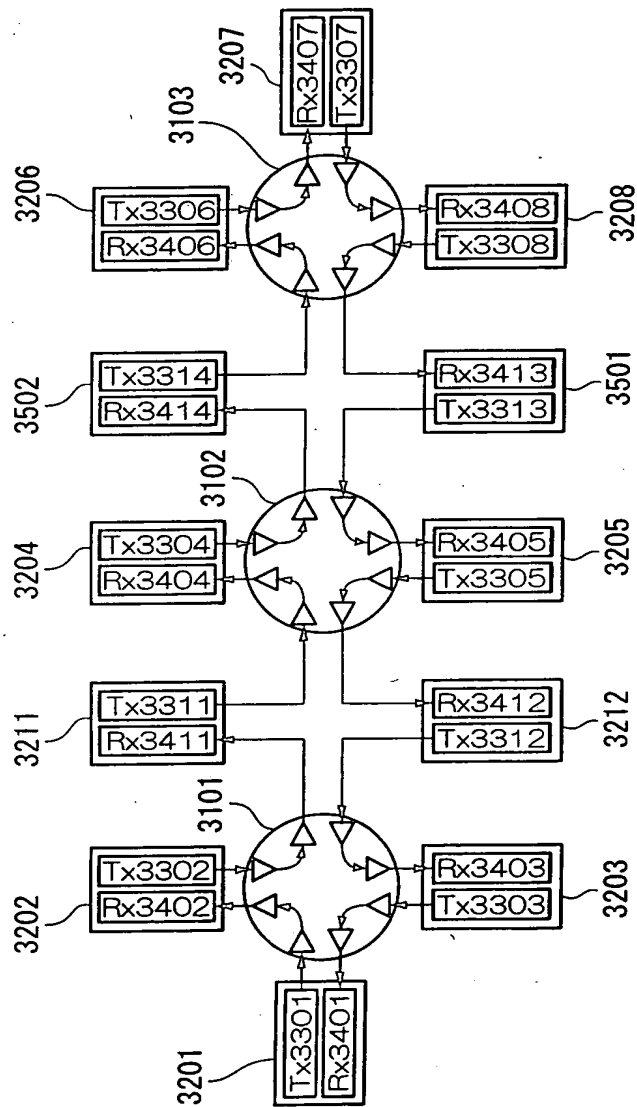


FIG.25



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FIG.26

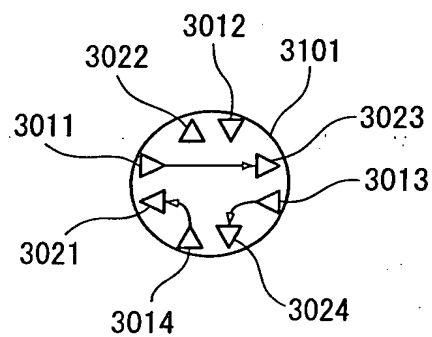


FIG.27

OPTICAL OUTPUT PORTS

OPTICAL INPUT PORTS		3021	3022	3023	3024
	3011	λ_1	λ_2	λ_3	λ_4
	3012	λ_2	λ_3	λ_4	λ_5
	3013	λ_3	λ_4	λ_5	λ_6
	3014	λ_4	λ_5	λ_6	λ_7

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FIG.28

		OPTICAL OUTPUT PORTS			
OPTICAL INPUT PORTS		3021	3022	3023	3024
	3011	$\lambda 1$	$\lambda 2$	$\lambda 3$	$\lambda 4$
	3012	$\lambda 2$	$\lambda 3$	$\lambda 4$	$\lambda 1$
	3013	$\lambda 3$	$\lambda 4$	$\lambda 1$	$\lambda 2$
	3014	$\lambda 4$	$\lambda 1$	$\lambda 2$	$\lambda 3$

FIG. 29

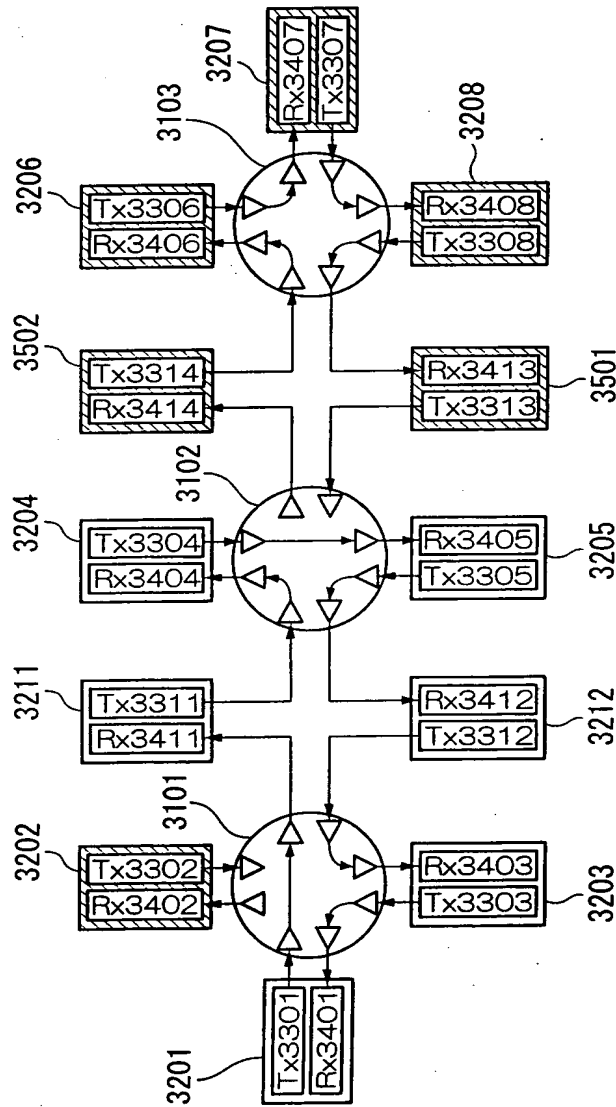


FIG.30

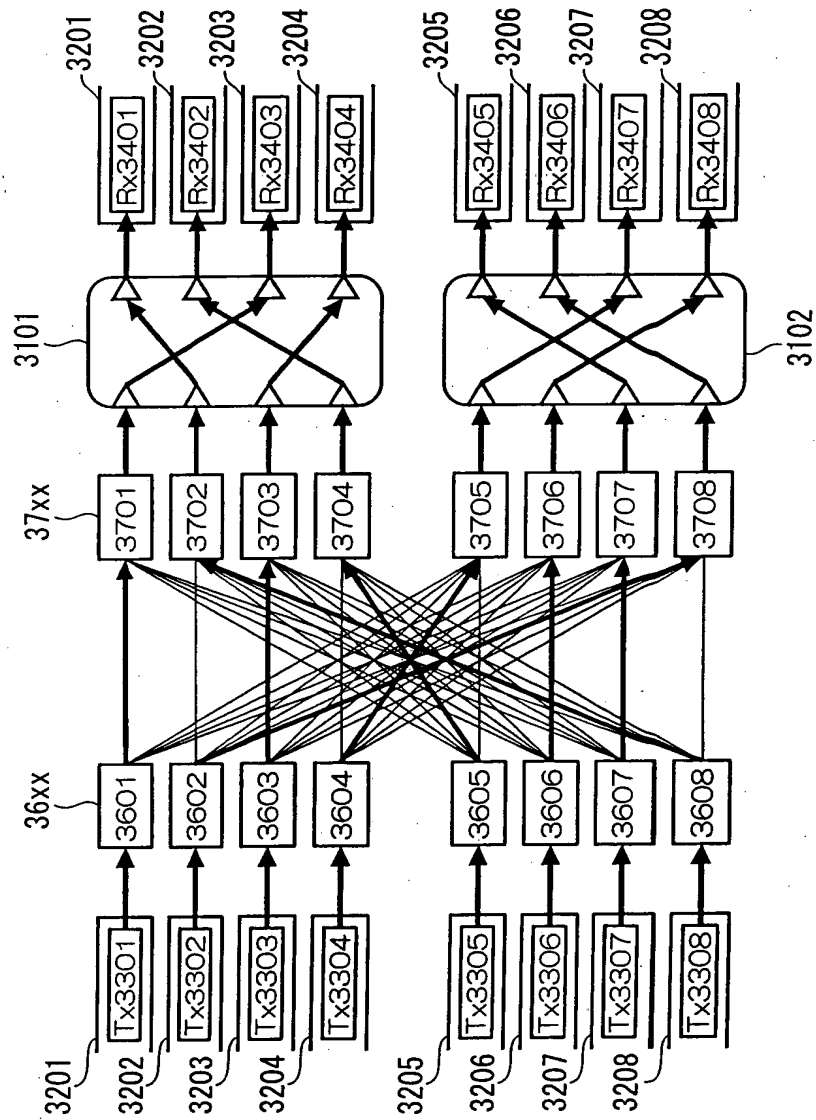
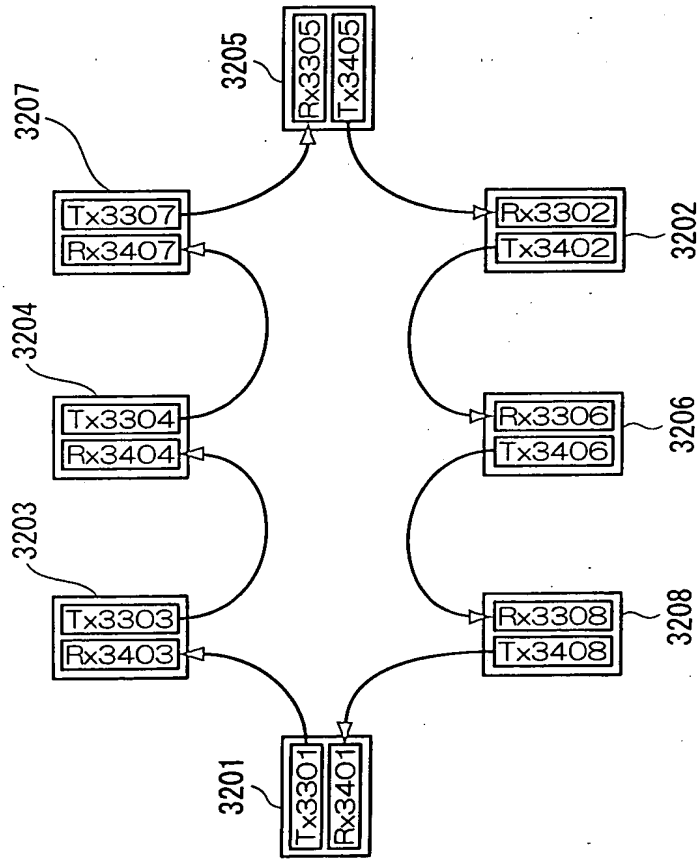


FIG.31



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FIG.32

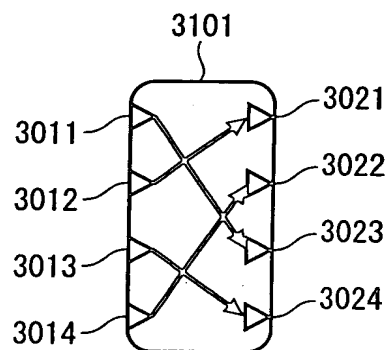


FIG.33

		OPTICAL OUTPUT PORTS			
OPTICAL INPUT PORTS		3021	3022	3023	3024
	3011	$\lambda 1$	$\lambda 2$	$\lambda 3$	$\lambda 4$
	3012	$\lambda 2$	$\lambda 3$	$\lambda 4$	$\lambda 5$
	3013	$\lambda 3$	$\lambda 4$	$\lambda 5$	$\lambda 6$
	3014	$\lambda 4$	$\lambda 5$	$\lambda 6$	$\lambda 7$

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FIG.34

		OPTICAL OUTPUT PORTS			
OPTICAL INPUT PORTS		3021	3022	3023	3024
	3011	$\lambda 1$	$\lambda 2$	$\lambda 3$	$\lambda 4$
	3012	$\lambda 2$	$\lambda 3$	$\lambda 4$	$\lambda 1$
	3013	$\lambda 3$	$\lambda 4$	$\lambda 1$	$\lambda 2$
	3014	$\lambda 4$	$\lambda 1$	$\lambda 2$	$\lambda 3$

FIG.35

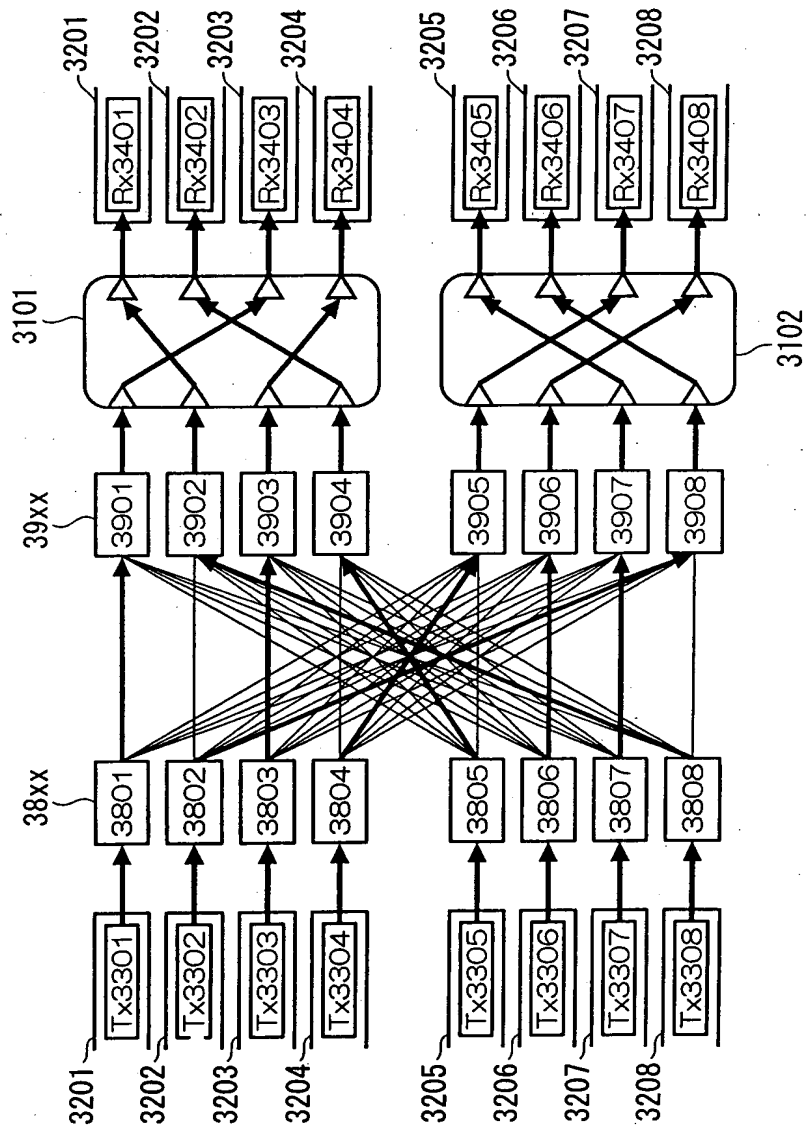
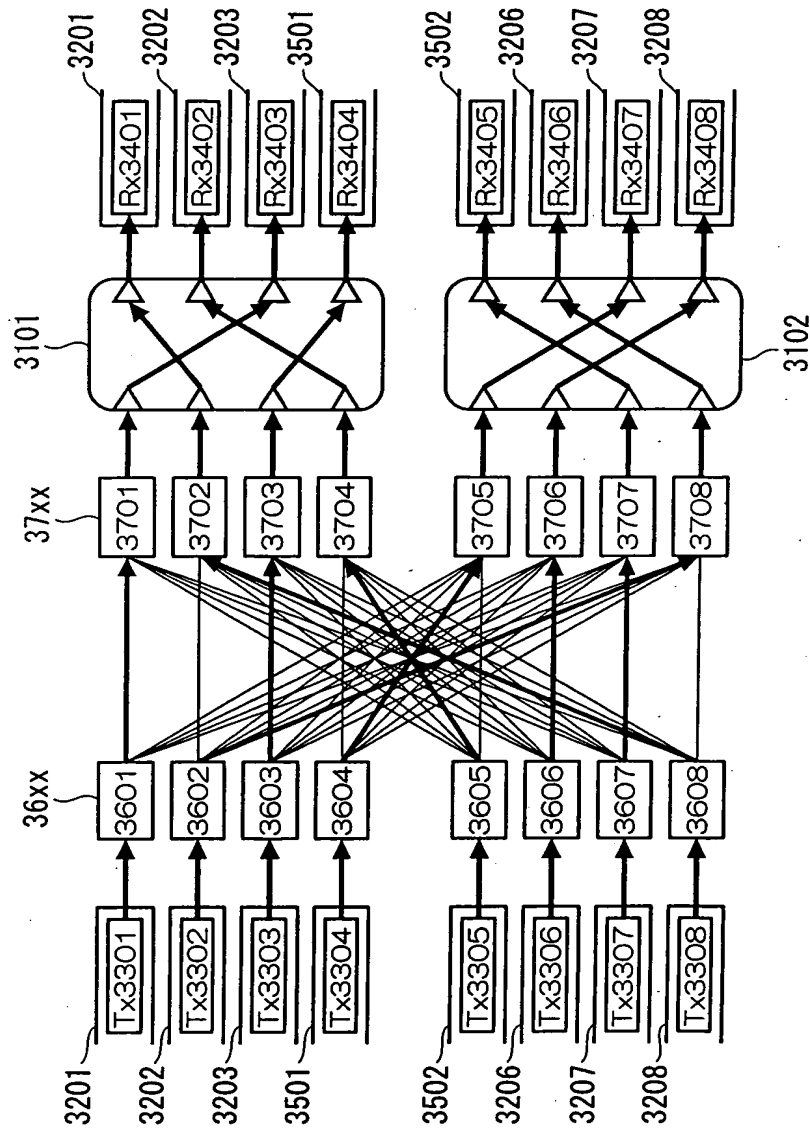


FIG.36



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FIG.37

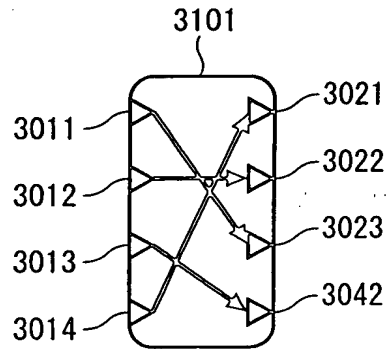


FIG.38

OPTICAL OUTPUT PORTS

OPTICAL INPUT PORTS		3021	3022	3023	3024
	3011	$\lambda 1$	$\lambda 2$	$\lambda 3$	$\lambda 4$
	3012	$\lambda 2$	$\lambda 3$	$\lambda 4$	$\lambda 5$
	3013	$\lambda 3$	$\lambda 4$	$\lambda 5$	$\lambda 6$
	3014	$\lambda 4$	$\lambda 5$	$\lambda 6$	$\lambda 7$

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FIG.39

OPTICAL OUTPUT PORTS

OPTICAL INPUT PORTS		3021	3022	3023	3024
	3011	$\lambda 1$	$\lambda 2$	$\lambda 3$	$\lambda 4$
	3012	$\lambda 2$	$\lambda 3$	$\lambda 4$	$\lambda 1$
	3013	$\lambda 3$	$\lambda 4$	$\lambda 1$	$\lambda 2$
	3014	$\lambda 4$	$\lambda 1$	$\lambda 2$	$\lambda 3$

FIG.40

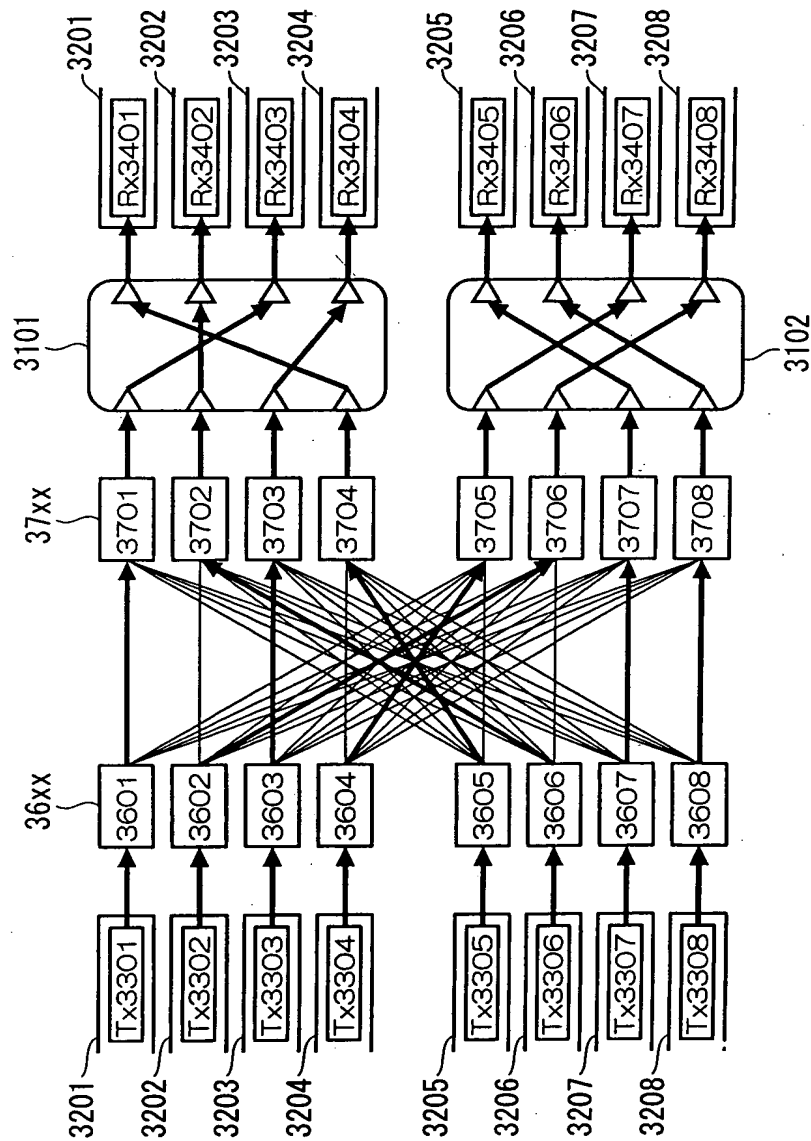


FIG.41

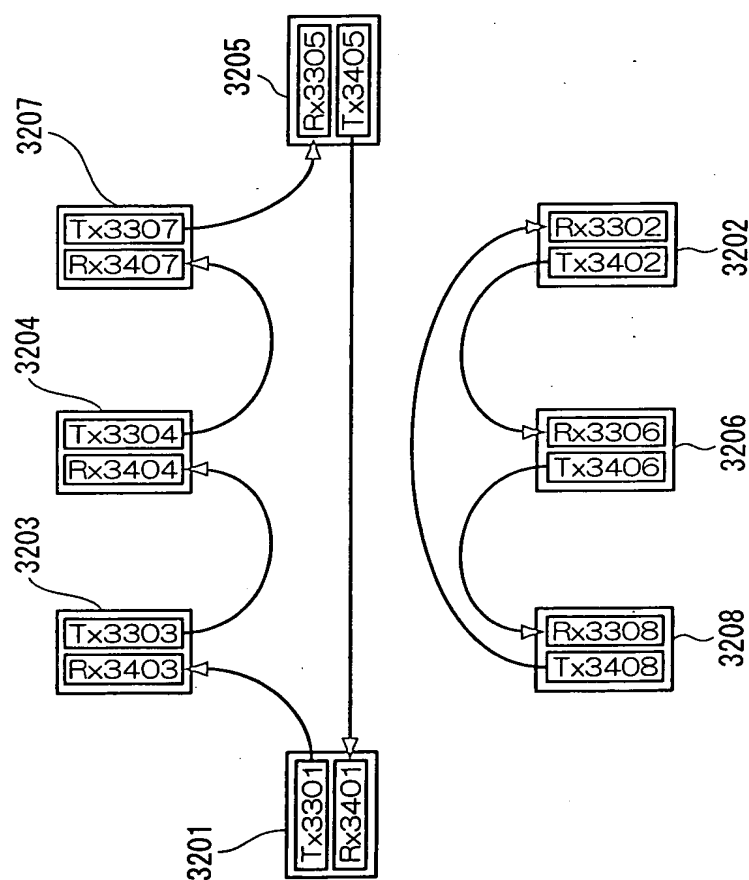
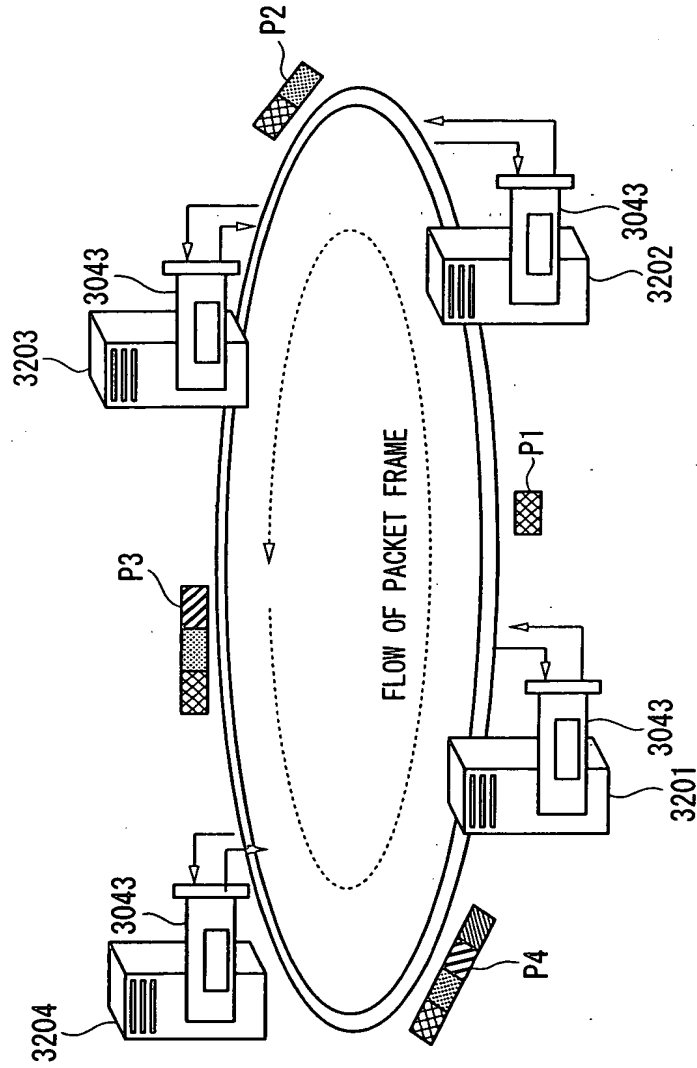


FIG. 42



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FIG.43A

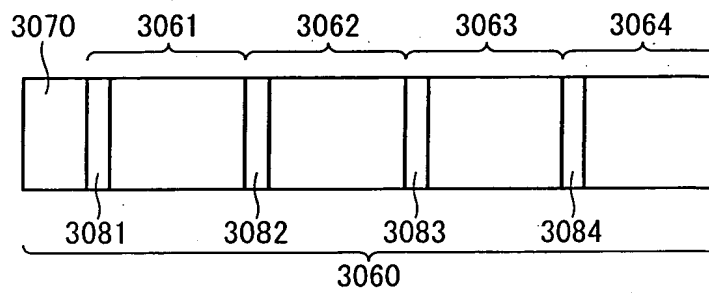


FIG.43B

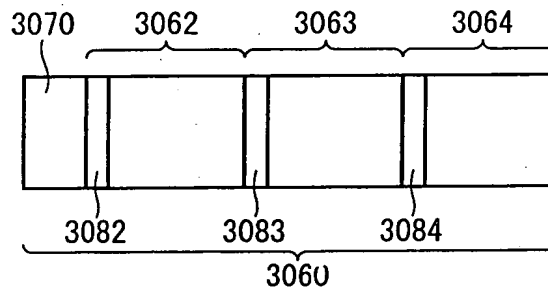
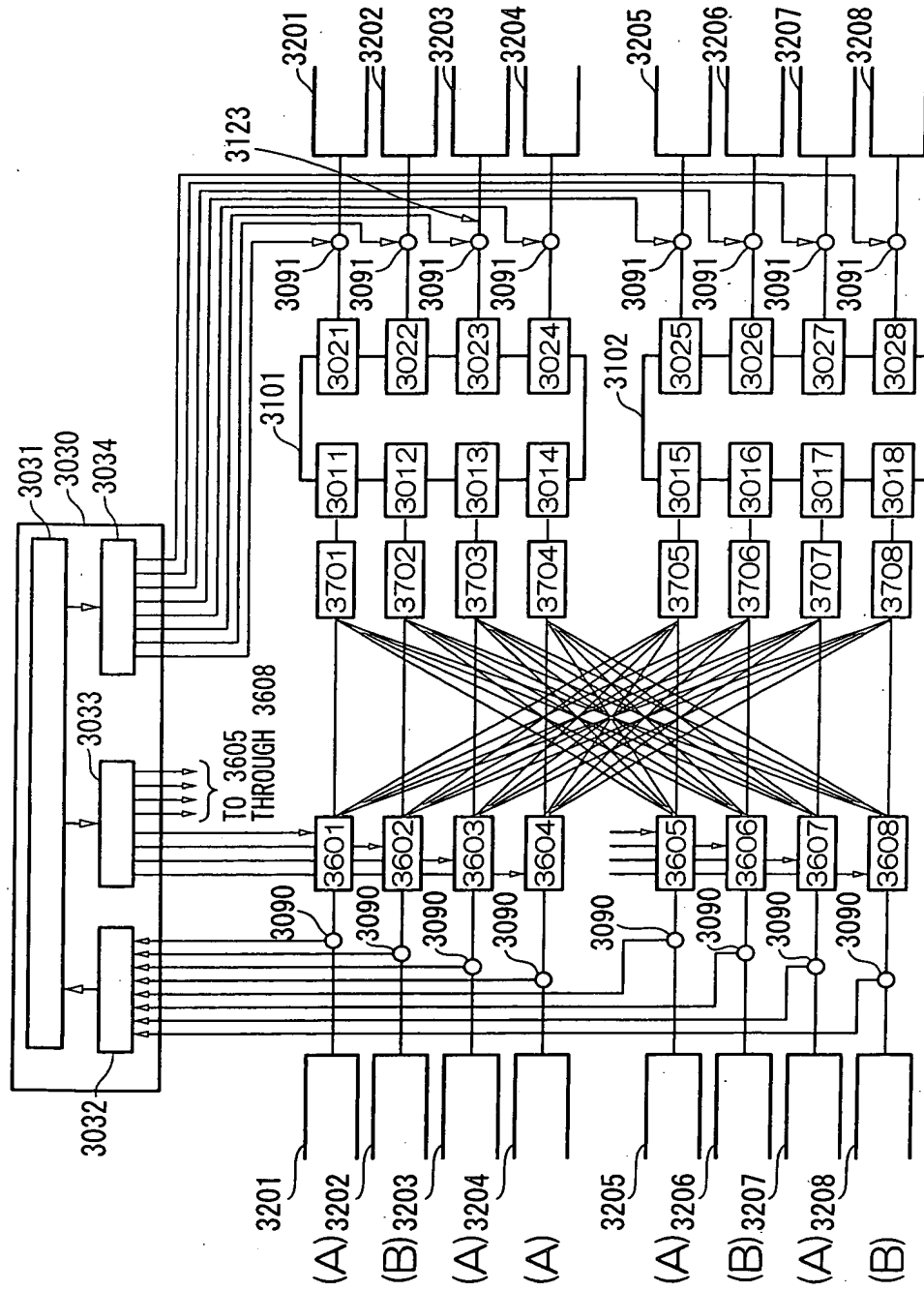
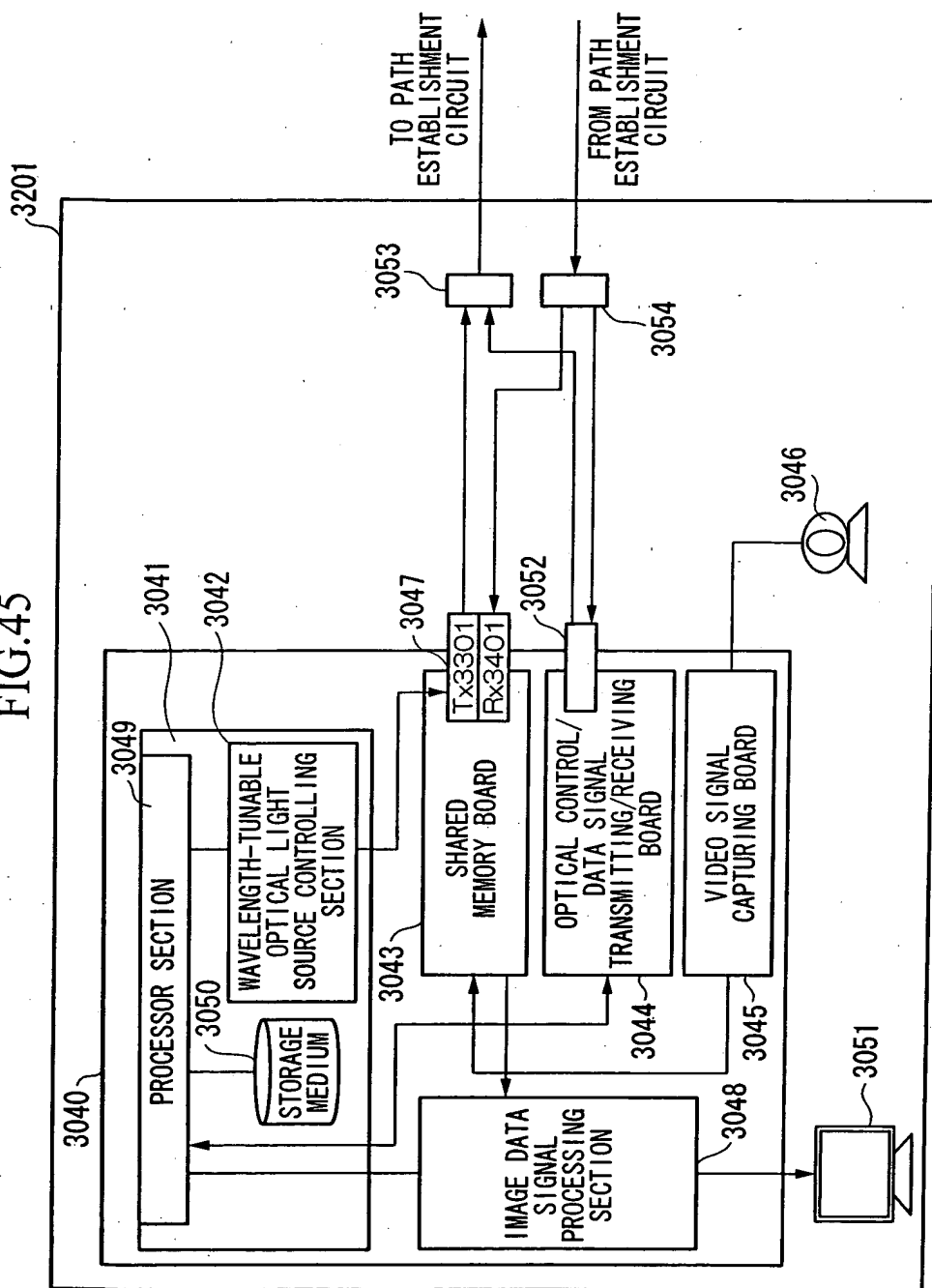


FIG. 44



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FIG.45



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FIG.46

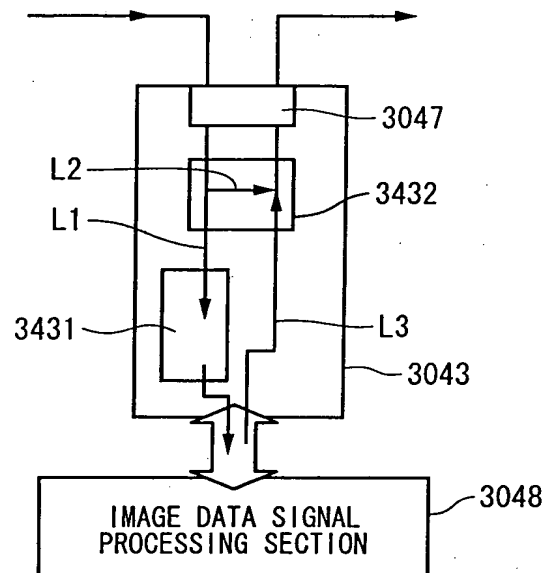
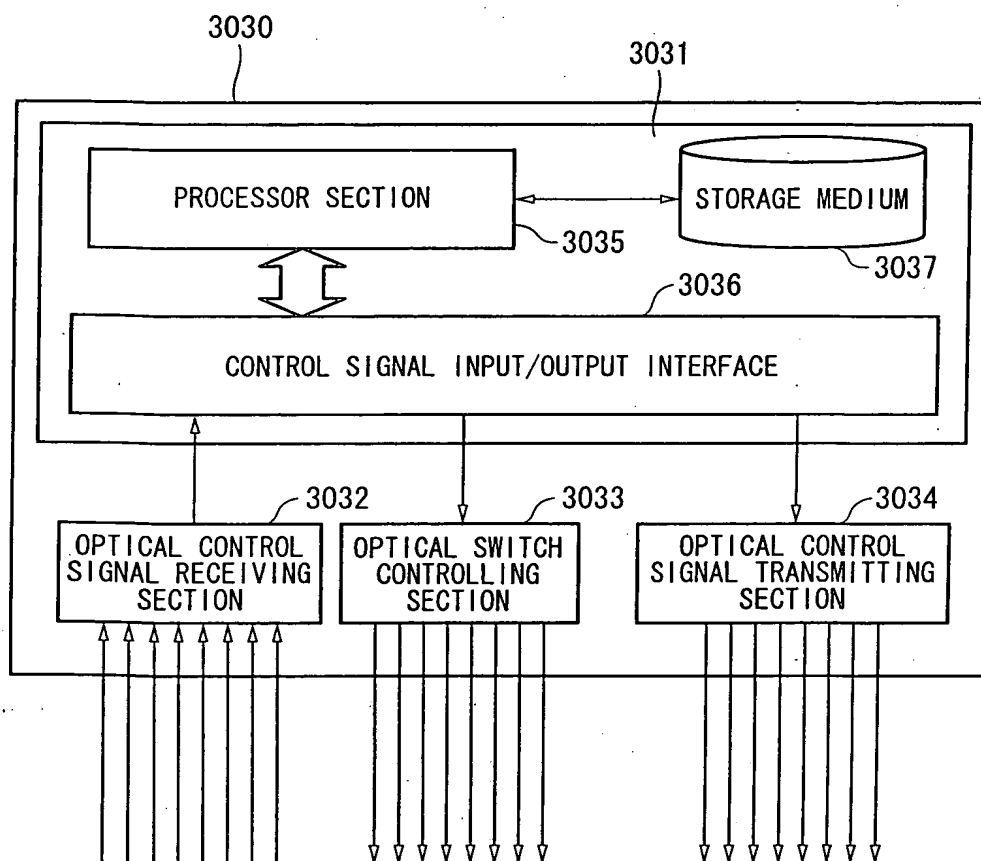


FIG.47



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FIG.48

OPTICAL OUTPUT PORTS

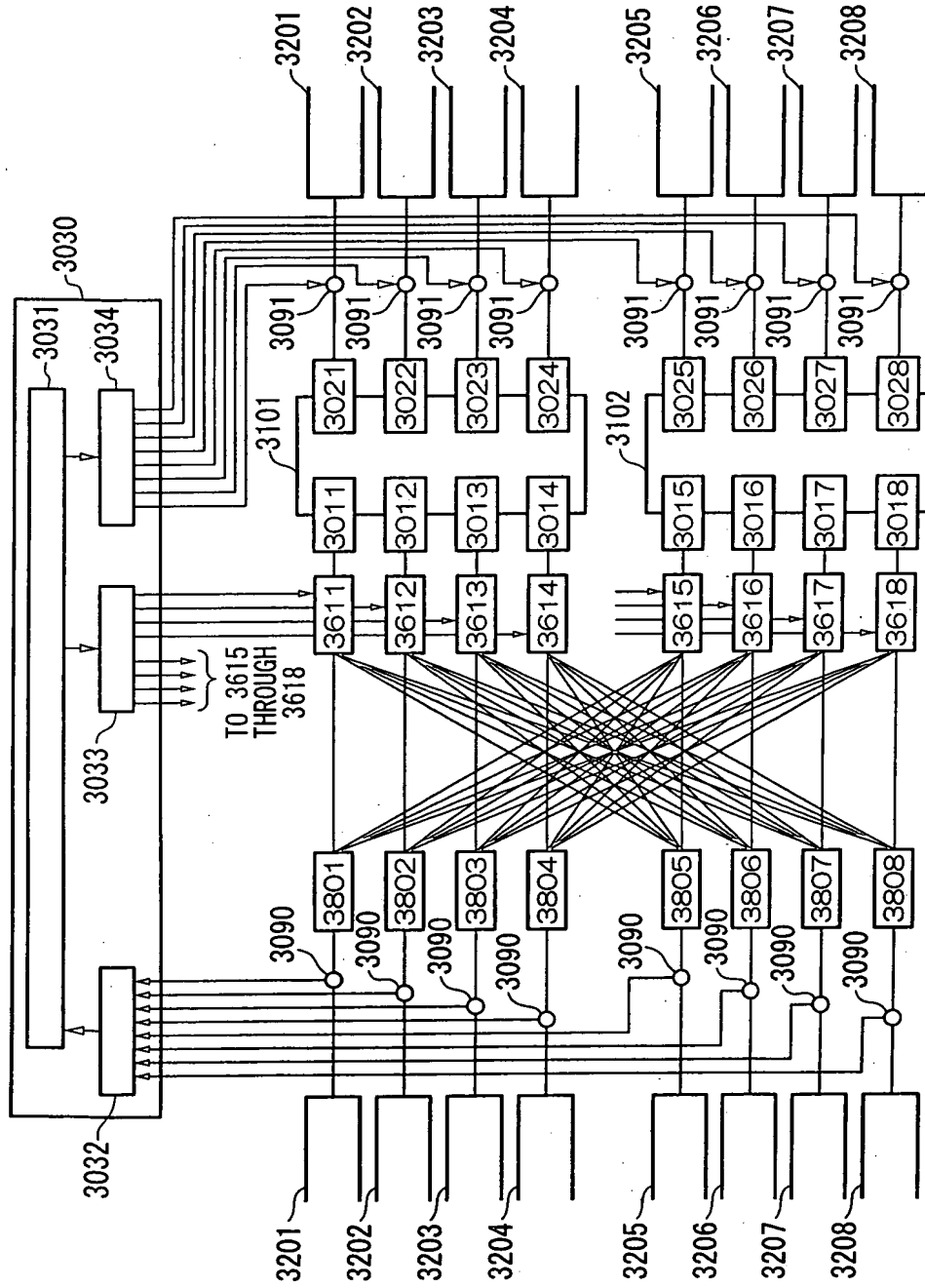
OPTICAL INPUT PORTS		3021	3022	3023	3024
	3011	$\lambda 1$	$\lambda 2$	$\lambda 3$	$\lambda 4$
	3012	$\lambda 2$	$\lambda 3$	$\lambda 4$	$\lambda 1$
	3013	$\lambda 3$	$\lambda 4$	$\lambda 1$	$\lambda 2$
	3014	$\lambda 4$	$\lambda 1$	$\lambda 2$	$\lambda 3$

FIG.49

OPTICAL OUTPUT PORTS

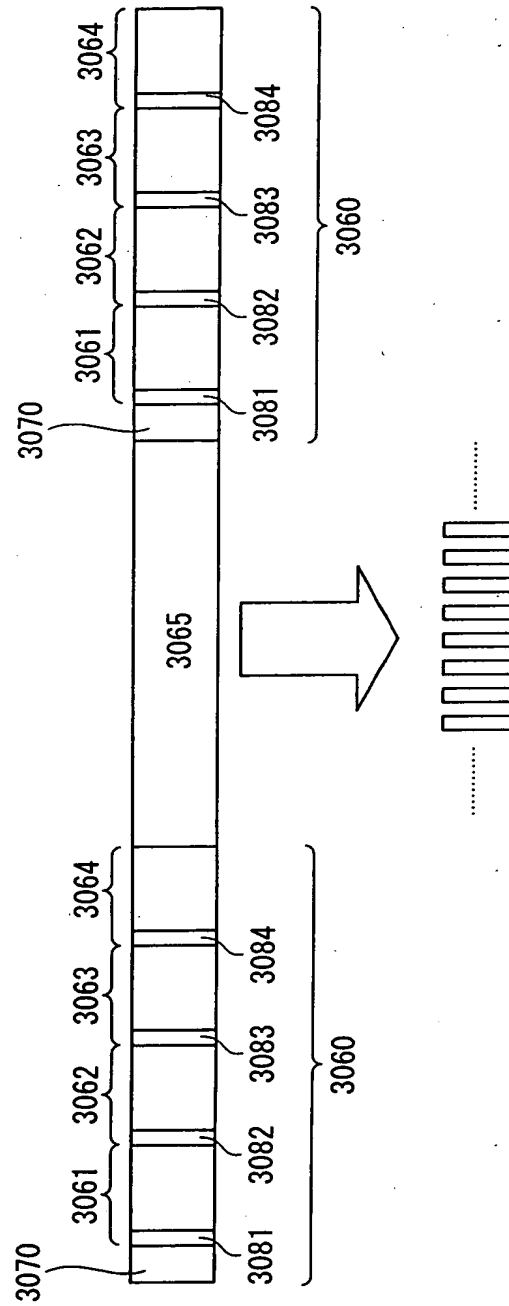
OPTICAL INPUT PORTS		3025	3026	3027	3028
	3015	$\lambda 1$	$\lambda 2$	$\lambda 3$	$\lambda 4$
	3016	$\lambda 2$	$\lambda 3$	$\lambda 4$	$\lambda 1$
	3017	$\lambda 3$	$\lambda 4$	$\lambda 1$	$\lambda 2$
	3018	$\lambda 4$	$\lambda 1$	$\lambda 2$	$\lambda 3$

FIG.50



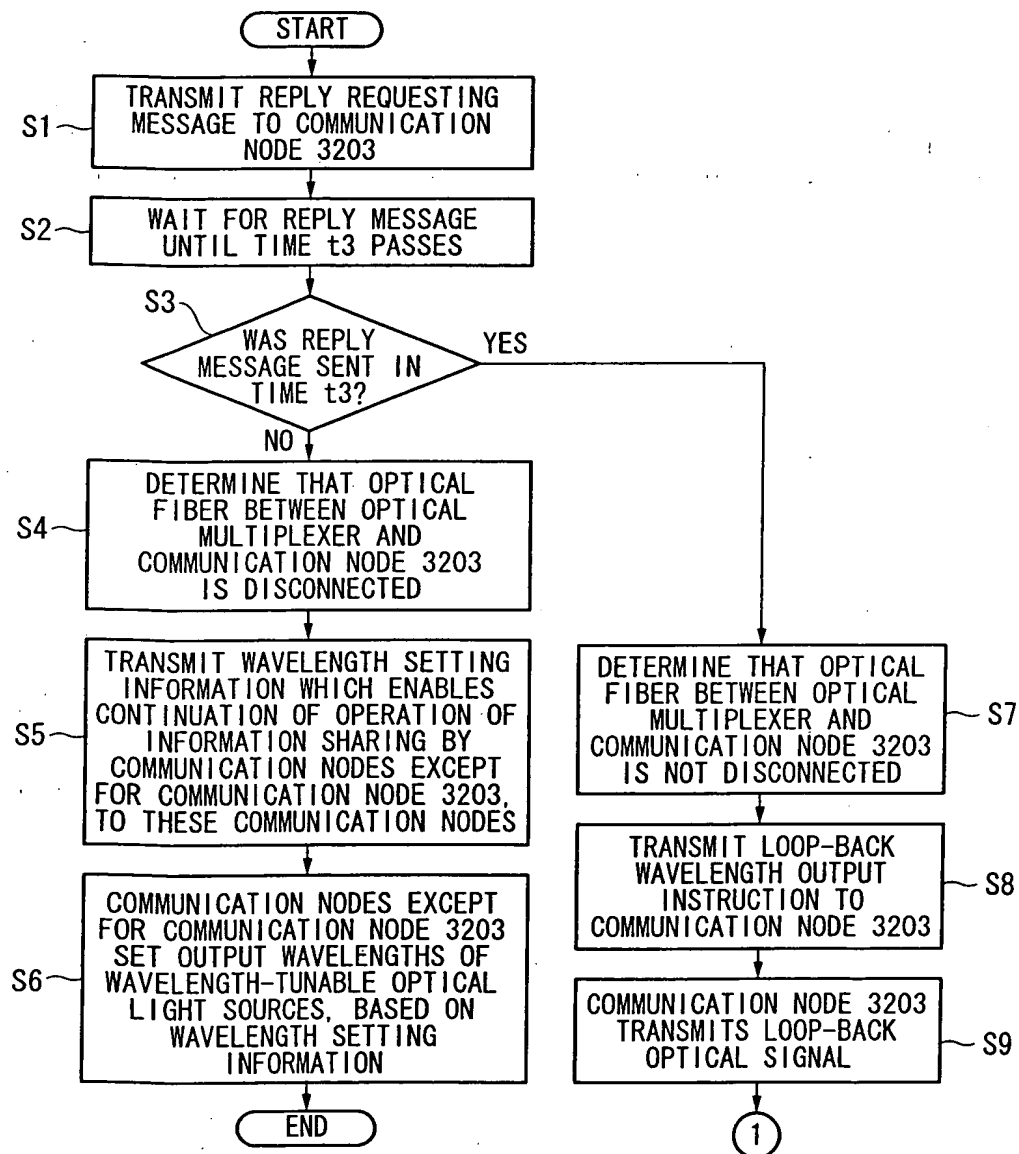
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FIG. 51



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FIG.52A



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FIG.52B

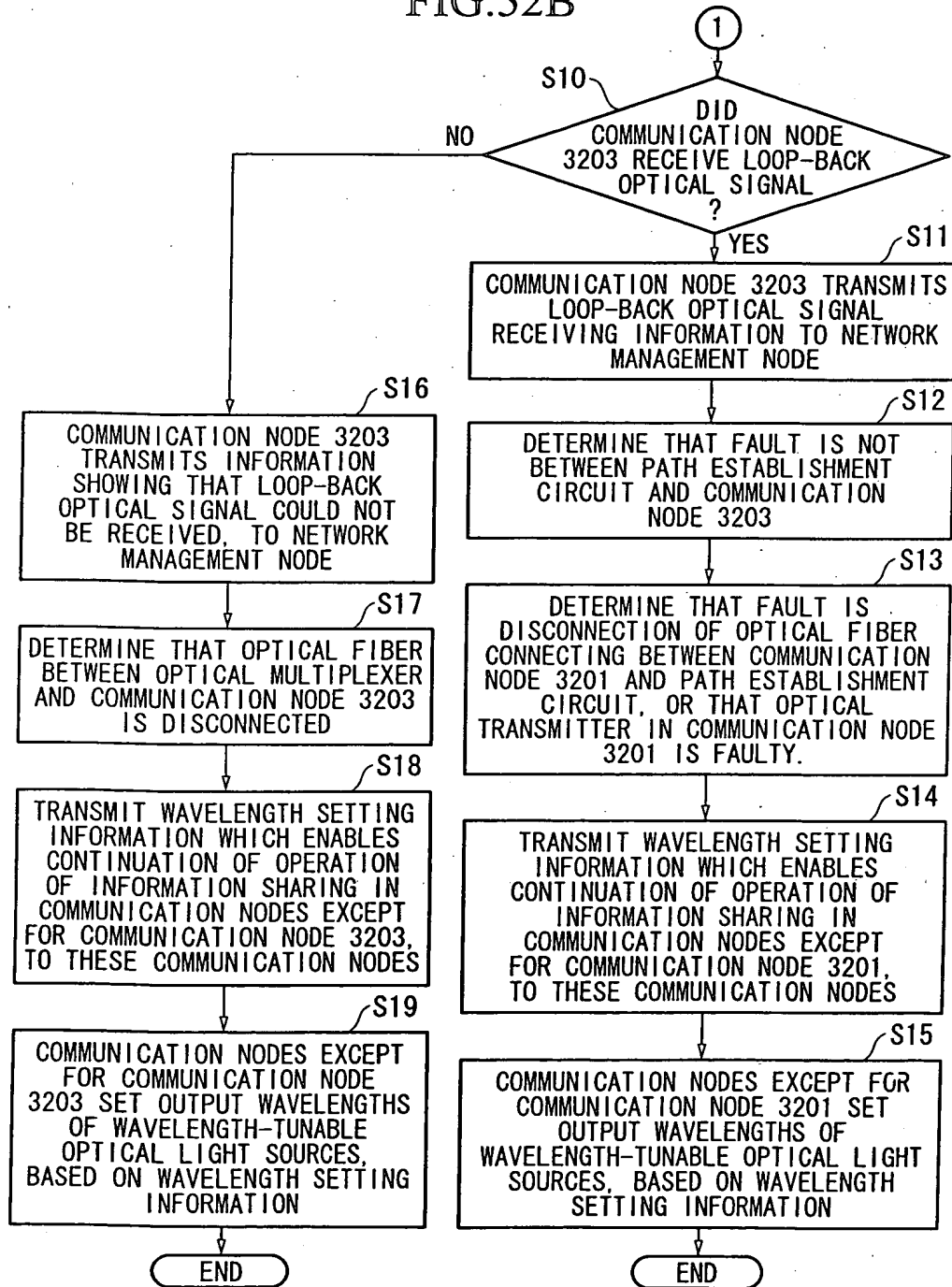
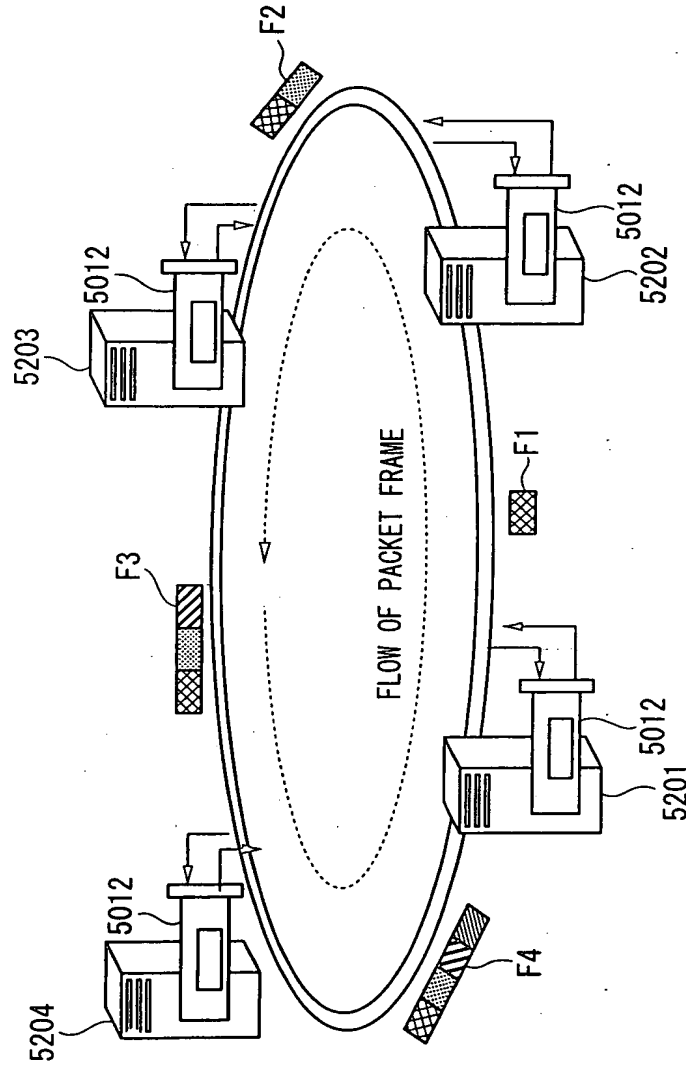


FIG. 53



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FIG. 54A

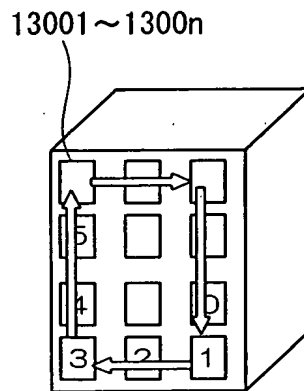


FIG. 54B

